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Index to Contents, Page 4

Advertising Index, Page 31

Excelsior Gas Soldering-Iron Heater

Power Blowpipe for Brazing

The "Thorp" Gauge For Testing Pressure and Consumption of Gas.

The Knott Jet Photometer

Gas works should be provided with a Jet Photometer at the outlet of the station meter to show the candle power of the gas it is making; also in the office at the works where the candle power may be observed as it is sent out.

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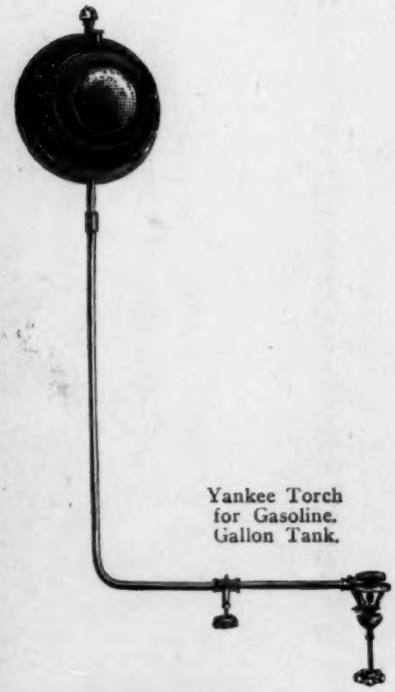

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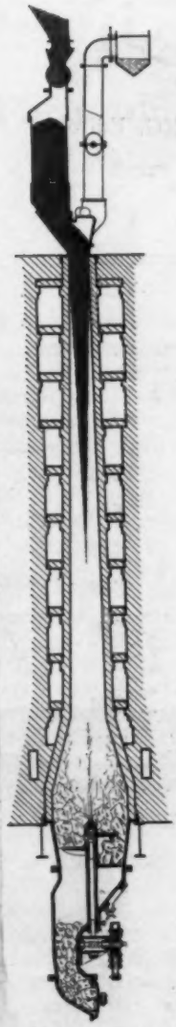

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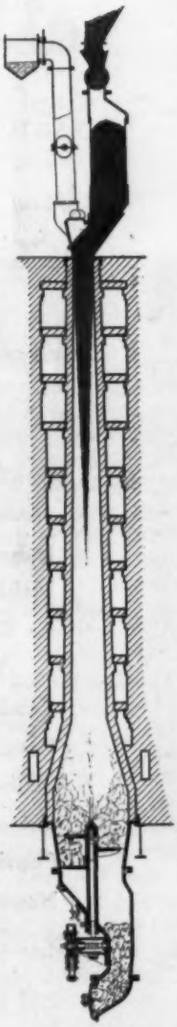

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Contents of This Issue

Gas for Volume Cooking—By James W. Cohn **543**
Househeating and Industrial Gas—By Henry L. Doherty **545**
Industrial Gas Lesson No. 76 ..... **547**
Making Gas in Vertical Retorts—By M. H. Frank **548**
As The Journal Views It **549**
The 1925 Convention
Fundamentals of Good Will Building—By Keith Clevenger **550**
Progress in Gas Technology **551**
Selling Good Will at a Profit—By W. E. Cecil **552**
Catechism of Central Station Gas Engineering, Installment 76 .. **553**
Consideration Asked from Gas Men—By R. M. Chatterton **560**
News of the Gas Industry **561**

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AMERICAN
GAS JOURNAL

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Gas for Volume Cooking

The problem of a hotel and restaurant gas sales engineer

James W. Cohn

Peoples Gas Light & Coke Co., Chicago, Ill.

WHEN we say "hotel and restaurant gas sales engineer" we may think that some presumptuous technically trained individual has carried specialization to a ridiculous degree. We are reconciled to the term "industrial gas sales engineer" and "heating gas sales engineer." Now the more advanced gas companies are waking up to the importance of the gas load for commercial cooking and an effort is being made to create a new specialist or consultant. This superindividual, who should have all the characteristics, habits and personality usually attributed to a successful man, is known as a "hotel and restaurant gas sales engineer."

James W. Cohn

It is human nature to take for granted anything that we are sure of. The sun rises and sets once in 24 hours. We have continuous gas, electric, telephone and transportation services, and we have a regular income as compensation for our efforts. We take all these luxuries for granted, and, alas, some of us do not fully appreciate them. But if, for any reason, there was any danger that we would be denied these luxuries, we would immediately put all our efforts into preventing their loss.

Gas Superior as Commercial Cooking Fuel

Gas as a fuel for commercial cooking is so evidently superior to all other fuels that the gas companies took its use for granted and did not fully appreciate the income from this source. Coal was gradually being replaced by gas, without any unusual effort from the gas companies. Circumstances such as the late war compelled some coal users to use gas and, unfortunately, or through the negligence of the gas companies, the customers were permitted to put gas burners in coal ranges.

Industrial gas users and the users of gas for heating are given special inducement, such as decreasing rates for quantity consumption, free and unsolicited engineering service, and free maintenance. The commercial cooking load was not given any of these advantages. The gas companies were too sure that the cooking load could not be taken from them.

Now there is a possibility of competition, efforts are being made, not only to prevent its loss, but to increase the load. The far-sighted policy of the progressive gas companies is generally responsible for the creation of Hotel and Restaurant Sales Engineering departments. The first duty of these volume cooking specialists is to analyze the problems of those who cook in volume, particularly those problems concerning the use of cooking fuel.

Giving the Customer Service

In doing this we are taking the first step usually taken to get new business, namely, giving the customer, or prospective customer, free and unsolicited engineering service. This service is productive of new business because of the unusual situation discovered solely through the efforts of this new specialist.

Every true gas man is thoroughly convinced, and

rightfully enthused over, the fact that we are now going through an industrial and house-heating evolution. Eventually we expect to see all homes heated by gas and all industries using gas wherever heat is necessary. We expect our slogan, "If It's Done With Heat, You Can Do It Better With Gas," put into effect with reference to industry and house heating.

A Large Hotel Kitchen Showing Gas Ranges

Why, then, neglect our present wholesale load, the use of gas for commercial cooking, which at one time was the only wholesale outlet for gas, to be used as heat? When considering advancement in cilivilization we must remember that the proper heat treatment of food is far more important to the human race than the proper heat treatment of steel.

Importance of Cooking

Most of us eat one meal a day away from home, and a good many two meals a day. Those of us who have wives with social aspirations are lucky to get two meals a week at home. Including in the above figure transients, hotel dwellers, those existing in boarding houses and those living in public or private institutions, approximately 50 per cent of the population are fed daily by those who cook food in volume. From a survey in the city of Chicago we find that there are about 6,000 eating places serving an aggregate of about 4,000,000 meals a day. I am sure that the heat treatment of this food deserves our serious consideration.

Data such as this, together with the fact that gas is used almost universally for volume cooking, naturally would tend towards laxity in effort for increasing this very valuable load. Consequently, while gas companies were basking in their apparent security, rival inferior fuels were encountered from time to time. As a result, competitive organizations more or less confused the minds of our customers and prospective customers in the choice of a fuel for commercial cooking. These customers were convincingly misinformed that coal, oil or electricity would do the work as well, or better. In fact, in some cases this misinformation presented was so convincing that cooking equipment using competitive fuel was bought and installed.

Customers Misinformed

Although in most cases this meant disaster to the purchaser and efficient gas-cooking equipment was finally installed, nevertheless, this was sufficient proof almost universally that this commercial cooking load was not entirely secure. Centralized sales engineering effort was necessary and the formation of a new permanent department, consisting of hotel and restaurant gas sales engineers, has in great measure corrected this insidious and annoying obstacle.

From the above discussion you can anticipate the mental attitude of the users of gas for commercial cooking towards gas as a fuel and the gas company. For example, the following conditions existed when the gas sales engineer entered the field: Some customers were using inefficient gas equipment; some gas-fired coal equipment, which is most inefficient; some were using effective gas equipment inefficiently. All users were thoroughly canvassed by high-powered salesmen representing other fuels. Everybody was dissatisfied. High bill complaints were being made and the customer was given no satisfaction because the inspector would find the meter working O. K.

A Hotel Kitchen with Fine Daylight Lighting

The Problem Before the Gas Man

The customer in this frame of mind is an easy dupe for the high-powered salesmen of other fuels, and the hotel or club builder, when considering new

(Continued on page 559)

Househeating and Industrial Gas*

A survey of important developments in the gas industry

Henry L. Doherty

MANY of the reforms that I want to recommend to your industry are the ones that were the most forcefully resisted by the artificial gas industry, but which are now generally accepted by men of that industry as being desirable reforms. Many of these reforms, I think, have never been questioned by the natural gas industry, and while I see no reason why we cannot keep in step with each other, nevertheless, I want to set up my own danger signal rather than have others do it for me.

We must all look forward to the time when we must supplement our supply of natural gas with artificial gas. Therefore, this whole paper is presented primarily from an artificial gas viewpoint. Unless new and unlooked for discoveries are made we cannot hope to maintain our economic position and compete with other fuels on a large scale if we attempt to supply a "fancy" gas such as is now supplied by the artificial gas companies.

Conditions in the Artificial Gas Industry

In the artificial gas business we put up an enormously expensive plant, lay huge cast iron mains even for distributors, have an individual service in every house and a meter, and yet the amount of energy we sell per year per customer on an average is so small that it is almost a joke. It is seldom more than the equivalent in energy value of three-fourths of a ton of coal per year. We must cut down not only the initial cost of our manufacturing equipment, but we must cut down the cost of the gas we make. To do this we must get permission of the regulatory powers to furnish any gas of any character that will satisfactorily do the work for the customer and thereby make possible the use by each company of the most economical material available. This will be in some cases a high B.t.u. gas where oil is the most available material for gas making.

Henry L. Doherty

By-Product Coke Ovens

It is my opinion that where there is a market for metallurgical coke, or other uses for coke which will command prices in the market equal to the metallurgical coke, that we will never find a cheaper way of making gas than in by-product coke ovens. The gas in this case is the by-product and the coke must be used even though the gas must be thrown away, therefore, no gas-making process directed primarily to the manufacture of gas can compete with by-product coke ovens under the conditions stated above.

This supply, however, would with an adequate development of the gas business be wholly insufficient to furnish all the gas we should be able to market, and it looks as though the future manufacture of gas must for several reasons take the form of the complete gasification of coal, which means the manufacture of a gas which under high speed, high capacity operation, will probably not have much more than 300 B.t.u. per cubic foot.

The Coals Used

It has heretofore been customary to make our gas out of the highest grades and highest-priced coals, often carrying a heavy freight charge. There is no reason why we cannot make a satisfactory gas for even the most particular purposes out of our lowest-grade coals. Coals almost unfit for ordinary fuel purposes can be used for gas-making purposes and the ash and other impurities of the coals be economically and effectively dealt with. Even a coal high in sulphur can produce a gas which when purified has a sulphur content far below the sulphur content in our highest-grade coals.

Solid Fuel Competition

We in the artificial gas business must find some way of enlarging our business and competing with solid fuel. The substitution of gas for solid fuel in the home for all purposes is a natural step for us to take and one which the public is rapidly taking for us, and to the great discomfort of many artificial gas companies. The house-heating problem for an artificial gas company when not properly controlled presents about as undesirable a load as you can find.

For a large portion of the year no gas whatever is required. All of it is sold during a period of about 6,000 hours in the latitude of the southern boundaries of our Great Lakes. During this 6,000 hours no gas is required at times and excessive amounts at other times, and when the excessive amount is required by one householder it is required by all householders and there is no appreciable factor of diversity. We in the artificial gas business or the natural gas business are expected to furnish plant capacity of whatever nature it may be to take care of the coldest hour and the coldest experienced day

*Read at the convention of the National Gas Association.

at any time. Most of the natural gas companies have repeatedly experienced the fact that they simply cannot do this. Some of the artificial gas companies are rapidly reaching the danger point.

The Three-Part Rate

In the universal application of the three-part rate and with a proper allocation of expenses it enables us to supply any sort of load at a profit. The question is, however, how can we get the adoption of the three-part rate when in many cases it raises the bills of more than two-thirds of all our customers? We can show that we do not even at the start have to collect any larger sum of money from our consumers as a whole than we now collect and we can show that the mere adoption brings a continuing increase in profitable business, thereby making it possible to serve our consumers as a whole better and at a lower cost. The consumers who are adversely affected are apt to strongly object although they are entitled to no consideration, and the gas men have always been too timid in their efforts to enforce rational methods of charging. If we could develop a widespread belief among gas men that it was a duty they owed to the public to enforce fair and equitable rate, we might make more progress. It is our duty to the public to do this and we will never be able to realize our opportunities, either for our industry or for the public, until we universally adopt the three-part rate.

Winter and Summer Load

Coming back now and illustrating our problems again by the artificial gas business; we used to have a relation between our winter and summer load which was as one is to two. That is, our demand for gas in the winter time was twice the demand made upon us in the summer. Of late years the tendency of the public has been to adopt gas more and more for supplemental house-heating, and especially to use gas for house-heating when the coldest days came, even though they used none on ordinary days. This has brought about a demand for gas in cold winter days of in some cases four times our summer load. It has also brought about a condition where the consumption of gas may fluctuate as much as 25 to 33 1-3 per cent from day to day, making the operating problems of these gas companies not only extremely difficult, but very expensive.

As I have already pointed out, the house-heating load has no reason to scare us and every reason to please us if we can get it under proper conditions and a customer pays for whatever demand he may occasion. This load, however, under our present rate system and uncontrolled is becoming a serious menace to the artificial gas companies.

Oil and Gas Allies

Oil and gas, instead of being competitors, ought to be allies. We have had no trouble in selling gas for house-heating purposes for as much as the equivalent of 28 cents per gallon for oil. We have had no trouble selling artificial gas for industrial purposes at as much as the equivalent of 25 cents a gallon for fuel oil. On the other hand, the oil man's product does not take the higher competitive value of gas, but is based on the competitive value of its product when used to displace cheap steam coals, and this condition will, in my opinion, continue to prevail until we can create the condition in the oil business where we have a dependable and reliable supply and can match our production with our consumption.

The magnitude of consumption of domestic fuel in this country is not appreciated by many people. Taking all forms of fuel used for domestic purposes and converting it on an energy basis into terms of coal it represents an annual consumption of about 168,000,000 tons, or in terms of oil it would represent something in excess of 700,000,000 barrels, which is approximately equivalent to the entire production of crude oil in the United States.

House Heating With Gas

We are proposing to heat houses with the use of gas to carry the load which is more or less fixed and use oil to carry our peaks. We originally planned to build two types of house-heating burners, one that would use gas to heat the house down to a certain temperature and then supplement all additional heat required by the use of oil. This burner would work out so as to give the gas companies an ideal load if universally adopted by all customers, but unfortunately we have not been allowed to apply the three-part rate universally and we have many customers who come on the line only in cold weather. We, therefore, planned to build a second burner which would use gas through ordinary ranges of temperature to heat the house. This burner would be controlled by both an inside and outside thermostat. The inside thermostat would maintain the house at the temperature desired, say 70 degrees, and the outside thermostat would control the nature of the fuel used. The outside thermostat would cut off all the gas when the outside temperature reached some predetermined point and substitute oil for the gas.

Lessened Demand for Gas on Cold Days

The house equipped with this burner would require no gas for heating purposes on cold days. This

(Continued on page 555)

INDUSTRIAL GAS LESSONS

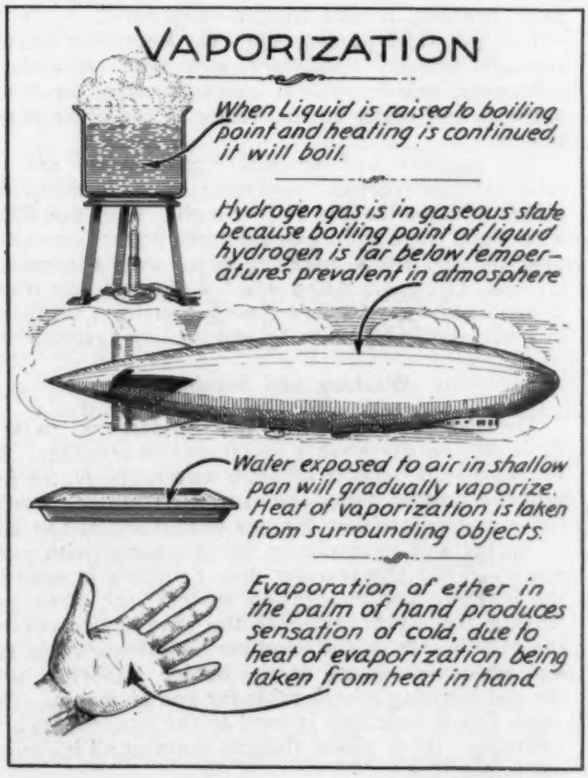
IF IT'S DONE WITH HEAT — YOU CAN DO IT BETTER WITH GAS

Lesson No. 76

Heat and Change of State

The Latent Heat of Vaporization and the Boiling Point

Just as every substance possesses a fusion temperature or a solidification point, so does it have a vaporization temperature or a temperature at which condensation of its vapors takes place. In other words, each substance possesses a definite boiling point as well as a definite melting point. Those substances that are naturally gases, such as the gases that are found in the atmosphere, viz., oxygen, nitrogen, carbon dioxide, etc., have boiling temperatures which are far lower than the temperatures usually found in the atmosphere. There are other liquids which possess boiling temperatures which are close to those of the atmosphere. For example, the liquid ether has a low boiling temperature, and so has carbon bisulphide. Sulphur dioxide, which is the gas that is obtained by the burning of sulphur, has a rather high boiling temperature for a gas.


VAPORIZATION
When Liquid is raised to boiling point and heating is continued, it will boil.
Hydrogen gas is in gaseous state because boiling point of liquid hydrogen is far below temperatures prevalent in atmosphere
Water exposed to air in shallow pan will gradually vaporize. Heat of vaporization is taken from surrounding objects.
Evaporation of ether in the palm of hand produces sensation of cold, due to heat of evaporization being taken from heat in hand

What Is the Boiling Temperature?

Theoretically, the boiling temperature is that point at which the liquid is changed into the gaseous or vapor state. But, when a pan of water or of ether or any other liquid, possessing a comparatively low boiling temperature and a low latent heat of vaporization, is exposed to the open air, the liquid evaporates slowly, although the temperature of the same is far below its boiling point. This would seem to contradict the law that states that a certain amount of heat must be supplied to the liquid at the boiling temperature before it can be converted into the vapor condition. However, a closer examination of the phenomenon will reveal that, while evaporation is taking place, the rate of vaporization is very slow, and the heat is being supplied to the liquid over a longer period of time than when it is heated to the boiling temperature, allowing vaporization to take place in the usual manner. It must not be thought that evaporation is being accomplished without the consumption of heat. The heat necessary for this evaporation is being supplied by the neighboring objects and their temperature is being reduced.

That this is the case can be readily demonstrated by pouring a little ether or alcohol on the back of the hand and allowing the liquid to evaporate. A sensation of cold will be experienced at once. This simply indicates that the latent heat of vaporization, which is necessary to convert the liquid ether or alcohol into the vapor condition, is being taken from the hand. That is why the hand feels cold as evaporation takes place. It is also the reason why sick, feverish patients are sponged with alcohol to relieve them of excess heat.

Making Gas in Vertical Retorts *

Results of five years operation of a vertical retort gas plant

M. H. Frank

Manager, Wisconsin Power and Light Company, Fond du Lac, Wisconsin

THE purpose of this paper is to give an outline and discussion of the results obtained from five and one-half years operation of a vertical retort gas plant comprised of two benches of nine retorts, each operating under normal and abnormal conditions as experienced before, during and after the war period.

History and Description of Vertical Retort Plant

The Fond du Lac Plant, with which this paper is concerned, was completed and put into service September 25, 1918. The plant was an entirely new installation, built at a new location near the outskirts of the city to replace a combination horizontal retort coal gas and water gas plant located in the heart of the city.

It consists essentially of two benches of U. G. I. vertical retorts, nine retorts per bench, retorts being oval shaped about 19 inches by 30 inches in diameter and 22 feet high. Each retort holds a charge of about one ton of coal. The coal as delivered to the plant is dumped into a track hopper from which an apron conveyor delivers it to a crusher. It is crushed and elevated by means of a bucket elevator to a one hundred ton bunker in the top of the retort house. From the bunker it is distributed to the retorts by gravity and through an electrically propelled charging larry.

Heating the Retorts

The retorts are heated by means of attached producers using coke as producer fuel. Air and steam are blown into the producers forming producer gas. A supply of secondary air, which has first been preheated to 1,500 degrees F. in recuperators, meets the producer gas in a combustion chamber and the burning gases pass along to the retort section, circulating back and forth and upward, then down through the recuperators, giving off considerable of their heat to the incoming secondary air. The flue gas leaves the benches at a temperature of 1,200 degrees F., and passes through a waste heat boiler, where the temperature is dropped to 450 degrees F. This boiler generates sufficient steam to run the entire plant except in periods of severe cold, when considerable steam has to be used for heating the holder. All boiler feed water is softened by aid of a permutite water softener.

Use of Waste Heat Boiler

An induced draft fan draws the flue gases through the waste heat boiler and discharges them to the atmosphere through a small stack. As originally installed, these fans were in duplicate, one being steam-driven and the other motor-driven. It was found, however, that the fan which was standing idle was soon corroded by the sulphur and the gas to such an extent as to be useless. The steam-driven unit was therefore eliminated, a by-pass built around the other unit and a steam jet installed in such a manner that in case of a failure of the motor-driven unit it could be by-passed and suction maintained by the steam jet until repairs could be made.

Treating the Gas

Gas is taken from retorts through offtakes at both top and bottom and passes through bridge pipes to the hydraulic mains. Weak ammoniacal liquor is sprayed into each bridge pipe and foul main at all bends and joints. As originally operated, there was about one-fourth inch seal carried in the hydraulic mains by means of a float governor. A Feel Regulator was later installed on the hydraulic main in order to be able to operate without seal and much more uniform results have been secured.

The gas after passing the Feel Regulator passes through primary condenser, exhauster, secondary condenser, bubble washer, Lloyd intensive scrubber, purifiers and meter to the holder in the order mentioned.

The primary and secondary condensers are of identical construction consisting of steel sheels 30 inches in diameter and 24 feet high. They are filled with wood trays and weak ammonia liquor is sprayed over the top trays, trickling down over succeeding layers. The gas passing upward through the trays is exposed to a very large wetted surface, resulting in a very effective washing and cooling system.

Washing and Scrubbing

The gas, after leaving the condensers, passes through a bubble washer and intensive scrubber. In the washer it bubbles through water, the water fed into the washer being the overflow from the scrubber. In the scrubber the gas is relieved of the last of its tar and ammonia by being washed with pure water. Thus the counter flow principle is used in the washing and condensing system; the clean gas leaving the scrubber where the pure water enters, the overflow from the scrubber containing some tar and ammonia passing to the bubble washer, where the gas contains considerable tar and ammonia. The weak liquor resulting is used in the condensers and hydraulic mains, where the gas contains all its original impurities.

The gas, after passing through bubble washer and intensive scrubber, goes to the purifiers. The purifiers are of the outdoor concrete purifier, of which

(Continued on page 556)

As The Journal Views It

THE 1925 CONVENTION

It is none too early to call the attention of the American Gas Industry to the convention that will be held this year, as usual, at Atlantic City, the week commencing October 12 and ending October 16. Preparations are now being made for a most comprehensive and interesting program, covering all the phases of the American Gas Industry. While it is really a very difficult task to develop a better program than has been prepared for these meetings in the past, such an attempt is being made, and there is no question but that the staff of the American Gas Association, with the co-operation of the gas men themselves, will be successful in its task.

Those who have attended these annual conventions in the past know well what they are and what real benefit in many different ways can be obtained from attendance thereat. It is not only that interesting papers will be read and valuable information disseminated at the various meetings of the general sessions and of the different sections as well, but the gas man who attends this convention will gain much by association with his fellows, through the renewal of old acquaintances and friendships and the making of new ones. The American Gas Industry can well be proud of its annual conventions and of the devoted staff at the headquarters of the American Gas Association of New York, for the enthusiasm and spirit they put into their work, particularly in their effort to make each convention each year better than the one that has gone before.

As usual, and for the fourth consecutive time, the American Gas Journal will issue a set of five dailies, beginning with Monday, October 12, and ending with Friday, October 16. The gas men are now thoroughly familiar with these dailies and with the unique service that they render the gas industry at large, including not only those men who are so fortunate as to be able to attend the convention, but also those who have to remain at home and keep the fires burning, so that that service for which the American Gas Industry is justly famous is given our customers while a goodly number of gas men are engaged in that pleasant and most important task of reporting the work of the past year and laying plans for future important developments in all phases of the gas industry.

These daily issues of the American Gas Journal will record meetings of all the various sections, the occurrences and events of interest during the week, and will give the gas men, as heretofore, a complete picture of all that took place during the convention at Atlantic City. The American Gas Journal dailies have become a real feature of the convention and one that gas men look forward to with a great deal of pleasure each year. Many favorable comments have been received in the past regarding their excellence and it is our hope and ambition that we can make these issues still more useful and valuable, still more comprehensive and authoritative this year.

Gas men will recall the various services that the American Gas Journal was happy to render them while at the convention last year and this year it will be our endeavor not only to continue these services to all the gas men, but to add others as well, concerning which we shall have more to say a little later.

That the convention will be very worth while attending and that great benefit will be derived by all who attend is simply stating what has been amply demonstrated by past performance. It is hoped that the attendance this year will be a record one and all who are able will take advantage of this wonderful opportunity of meeting with fellow gas men from all over the country, to discuss the results that have been accomplished during the year, to evolve plans to further the splendid work that the gas industry of America has done up to the present, so that the tremendous problems that face us will gradually be pushed forward to a final solution, so that our great industry will finally reach its goal and so that gas will eventually become the universal fuel in the home and in industry.

Fundamentals of Good Will Building*

All employees must be educated in public relations work

Keith Clevenger

A GREAT deal has been written and said about utility relations and their influence on public opinion. The utility and the "public" has been the theme of a large number of papers and addresses delivered by public utility executives in the past four or five years. For the most part they have treated the public aspect of our business in a most abstract manner.

Notwithstanding all of these speeches, all of these articles, and a large part of the money expended for public relations departments and personnel, the subject of proper public relations, of good-will building and maintenance still seems to be more or less of a mystery to many utility organizations.

Public Relations a Potent Term

The term "public relations" is all that it implies. Just as we are governed in our homes by certain rules of "domestic relations," or should be if our domestic life is to be happy and fruitful, so must the public utility be governed by certain rules of "public relations," if its business is to progress and prosper. Public relations implies a greater variety of details ranging from the demeanor of meter readers, cashiers, counter clerks and telephone operators to the questions of rates, of regulation, of service, of finance and other problems or operation. "Anything," says B. J. Mullaney, "that has to do directly or indirectly with contacts between the public and the utility is an item of public relations."

Must Begin With Executive

Public relations, to be successful, must begin with the chief executive of the company. In fact, if it does not begin there and receive its inspiration from the chief executive, it will not be respected down the line, hence its effectiveness is seriously impaired at the very beginning, if not absolutely nullified.

Every utility organization has three major functions, each of equal importance. These three functions or responsibilities are, (1) operations, (2) salesmanship, and (3) public relations or good-will building.

The successful operation of any utility, we will all agree, depends first upon the efficiency and thoroughness of its operation, upon its mechanical efficiency.

Public Relations Not a Distinct Department

The public relations function is not, as many attempt to treat it, a separate and distinct department of the industry. It is a function that should be (and may I say here that in our organization it is) a part of the program of each department of the business, aiding every employee to a better understanding of the business and its aims, bringing about a better understanding of the relationship of the various departments to each other, and the common appreciation of the value of co-ordinating our operating knowledge and efficiency, with intelligent salesmanship methods so that understanding and good-will toward our business will develop in keeping with its growth and prosperity.

One of the hardest tasks in the utility business is to find a manager who places the proper value on and has the real understanding of these three functions and their relations to the successful operation of his property. How many managers are first-class operators, but utterly at a loss as salesmen or good-will builders? This one-sided sort of management has been very largely responsible for most of our troubles. In our own organization we have found it necessary frequently to divide the work of management between two men, one an operating man, the other a salesman and public relations man.

Development of Proper Type of Manager

One of the big tasks before the utility business today is to develop managers who have these combined qualifications of operators, salesmen and public relations men. Our greatest opportunity for the development of this type of manager lies in the education of our employees to the value of a proper understanding of these functions and the relation each bears to the success of the business as a whole.

Educating the Employees on Public Relations

It has been our experience that this program of employee training for greater responsibility has been accomplished in the following ways:

(1) Employee organizations, where all of our men meet socially on a common level and with a common interest.

(2) Schools or classes for the study of all the operating, salesmanship and public relations problems of the industry.

(3) Employee-customers ownership campaigns in which the employee sells company securities to the public. The success of these campaigns is not only measurable in the better distribution of company securities, but also in the development of the employee in salesmanship, and his opportunity for greater contact with our customers.

(4) Weekly and monthly letters and bulletins, bearing on some phase of the business and always setting forth how the employee not only can improve his ability as an operative, but how he can use his knowledge and his position to further the inter-

(Continued on page 558)

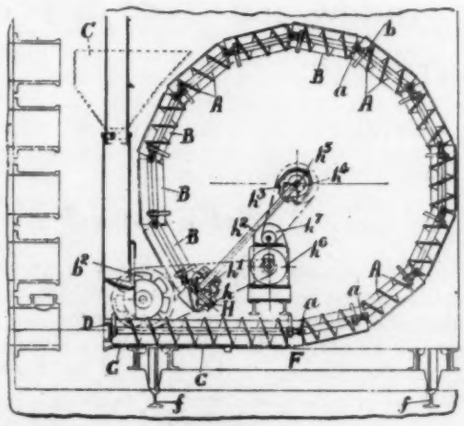
*From address before the Oklahoma Utilities Association.

PROGRESS IN GAS TECHNOLOGY
Domestic and Foreign

DISCHARGING AND CHARGING RETORTS

THIS invention for discharging coke from, and charging coal into, through retorts, describes an apparatus in which a spiral conveyor is mounted in a carriage and adapted to be supplied with coal from a hopper or other feeding device; the holder being provided at its forward end with one or more hinged pusher plates. Means are provided for traversing the spiral conveyor and holder through the retort so that the pusher plates discharge the coke therefrom. During this operation the spiral conveyor is not rotated and the major portion of the charge of coal which has been deposited into the spaces between the spirals is carried into the retort. On the return movement, the spiral conveyor is rotated to discharge the coal into the retort as the conveyor is withdrawn.

FIG. 1.



The spiral conveyor is caused to rotate at any predetermined speed in relation to its speed of withdrawal, with the result that the coal is left in the retort, being supplemented and banked up as desired.

In the figure A indicates a spiral conveyor, B the holder, C the hopper and D the pusher plates; and the conveyor is built up in sections connected together by universal joints a. The holder B is also built up in sections comprising two side plates fitted with bearings b for the conveyor sections to run in. Each side plate has attached to it a rack b^1 for engagement with a toothed wheel b^2; and the sections are hinged together at b^3, and are provided with studs b^4 arranged coaxially with the hinges b^3. These studs travel round curved guide rails mounted on a carriage F, which runs on rails f and can be traversed past the retorts. Mounted on the carriage below the front section of the conveyor and holder is a slidable bridge.

The front conveyor section is fitted with the pusher plates D, which are shown in the form of doors hinged to side plates B. The back section is connected by a universal joint with a shaft H, on which is a bevel wheel h gearing with a bevel wheel h^1 on a shaft h^2 on which is a bevel wheel h^3 gearing with a bevel wheel h^4 on a shaft h^5. On the latter is mounted a free wheel or its equivalent. The shaft h^5 is driven from the motor h^6 through the intervention of a gear box h^7, by means of which the speed of rotation of the conveyor A can be varied in relation to the speed of the toothed wheels b^2, which are driven by a belt or chain from the motor h^6.—(British Patent No. 231,1220.)

231220

FIG. 2.

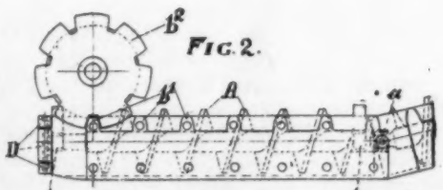
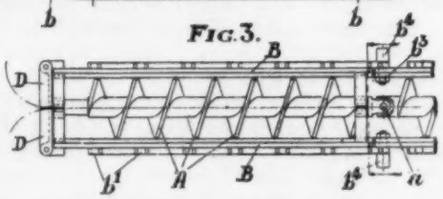


FIG. 3.



GRINDING COKE FOR ANALYSIS

THIS is the title of a publication soon to be issued by the Bureau of Mines, Department of the Interior.

It is stated that the tests that were made in this investigation were for the purpose of determining contamination of laboratory samples of coke, when pulverization is carried out by other methods than by ball mills of hard-steel diamond molders.

The conclusions that were derived from these experiments were as follows:

1. Coke samples may be pulverized to pass a No. 60 sieve for laboratory analysis by means of ball mills with flint pebbles, roll crushers kept in good condition and with the rolls rotating at the same speed, or by impact in a hard-steel diamond mortar without any appreciable contamination from the grinding apparatus.

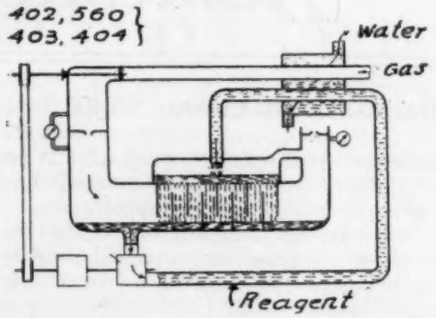
2. Grinding apparatus such as disc pulverizers or bucking boards are likely to contaminate appreciably the coke by introduction of iron from the

abrasive action of the coke on the rubbing surfaces.

3. The pulverizing of any quantity of coke by impact in a hard-steel diamond mortar is tedious and takes considerable time. Ball mills or roll crushers appear to be the most practical methods for pulverizing coke to pass a No. 60 sieve.

ANALYSIS OF GAS

THE illustrations show a device that is patented in German patents No. 402,560 and 403,404, and which is used for analyzing gases. The gas is passed in a continuous stream through an absorption chamber and a second chamber. Between the two chambers, which are shown in the figure, and which are used for maintaing constant speed of the gas through the apparatus, there are located connections for pressure gauges which measure the rate of circulation of the liquid that is used to absorb the gas.



Selling Good Will at a Profit

Attracting visitors through good window and store displays and proper advertising

W. E. Cecil

Peoples Gas Light & Coke Company, Chicago, Ill.

IT is quite necessary to sell GOOD WILL AT A PROFIT. This very thing is now being done in Chicago.

When we welcome those who favor us by entering our establishment in the same manner as we welcome our friends into our home we have accomplished something, we have made a good start toward GOOD WILL BUILDING.

When we recommend a piece of merchandise to our business guests, our recommendation means service—guaranteed service and unquestionable quality. If that piece of merchandise serves well the purpose we recommended it for, we have made a friend and sold GOOD WILL. In a public utility company the merchandiser's success is measured by the amount of GOOD WILL he builds.

Attracting the Public

The power of the public utility company to bring all of the residents of a community into its place of business at least twelve times each year is a greater power than that held by any other merchant in the community, so it becomes the task of the merchandiser not only to interest those who enter his store once a month to pay their bills and on other business, but to get them in the habit of coming oftener than once each month.

To accomplish this he must have something of interest to attract them.

There are three known means of attracting prospective buyers to our salesrooms oftener than their regular monthly business requires, namely, window displays, floor displays and advertising.

Window Displays

Good window displays attract buyers and their value cannot be overestimated. Windows should reflect the character of the institution and should be second to none in the community. Money rightfully spent for display purposes will be returned twofold.

Floor Displays

The big part of our game in merchandising and display is to move the public mind to want our merchandise, and the quickest means to that end is the environment of the merchandise itself. Sell them on the usefulness and the beauty of the thing in their home by giving it the proper environment—showing it up in the best possible way—making the price and terms attractive to them and the transaction will be a simple matter. You sell them not only to the merchandise, but to the better use of more gas. So merchandise environment will require a well planned and thoroughly organized salesroom, each type of merchandise in its place and conveniently set up for quick demonstration.

Advertising

An advertising program should be arranged well in advance of the date the advertisements will appear in the various newspapers. These advertisements should carry numerous items of seasonable merchandise and each time an advertisement appears a thought should be injected in that advertisement

(Continued on page 559)

Catechism of Central Station Gas Engineering in the United States

Installment No. 76

(Continued from last week)

Properties of Sand and Cement

The proportions of sand and cement are generally measured by volume. In actual work the cement is usually delivered in barrels, and consequently the most convenient unit for the cement is a commercial barrel, while it is most convenient to measure sand loose.

When the mortar is required in small quantities, as for use in ordinary masonry, it is mixed about as follows: About half the sand to be used in a batch of mortar is spread evenly over the bed of the mortar-box and then the dry cement is spread evenly over the sand; and finally, the remainder of the sand is spread on top. The sand and cement are then mixed with a hoe, or by turning and re-turning with a shovel. It is very important that the sand and cement be thoroughly mixed.

The dry mixture is then shoveled to one end of the box, and water is poured into the other end. An excess of water is better than a deficiency, particularly when a very energetic cement is used, as the capacity of this substance for solidifying water is great. The sand and cement are then drawn down with a hoe, small quantities at a time, and mixed with the water until enough has been added to make a good stiff mortar. This should be vigorously worked with a hoe for several minutes to insure a good mixture. The mortar should then leave the hoe clean when drawn out of it, and very little should stick to the steel.

Hydraulic Cement

Hydraulic cements are better and attain a greater strength under water than in the open air; in the latter, owing to the evaporation of the water, the mortar is liable to dry instead of setting. The difference is very marked in hot, dry weather. If cement mortar is to be exposed to the air, it should be shielded from the direct rays of the sun and kept moist by sprinkling or otherwise.

Grout is a thin or liquid mortar of lime or cement. The interior of a wall is sometimes laid up dry, and the grout, which is poured on top of the wall, is expected to find its way downwards and fill all voids, thus making a solid mass of the wall.

Grout should never be used when it can be avoided. If made thin, the water only slowly dries out of the wall; and if made thick, the grout fills only the upper portion of the wall. To get the greatest strength, the mortar should have only enough water to make a stiff paste—the less water the better. If the mortar is stiff, the brick or stone should be dampened before laying; else the brick will absorb the water from the mortar before it can set, and thus destroy the adhesion of the mortar. (Baker, Masonry Construction.)

Precautions in Laying Brick in Cement Mortar

358. What precautions must be taken when laying brick in cement mortar to secure the greatest strength in the finished work?

Ans. In laying bricks in cement mortar the joints should be made as thin as it is possible to have them and at the same time give a uniform bearing to the bricks; all joints should be filled with mortar and to insure adhesion between the mortar and the bricks, the bricks should be wet when put into the wall.

Thinness of the joints is required because the mortar is weaker than the brick and a thick joint is weaker than a thin one, even under the best conditions, and also because in outside walls the mortar in thick joints is more exposed to deterioration from the action of the weather.

Danger of Not Filling Joints

If the joints are not well filled the strength of the wall is obviously reduced. To secure thoroughly filled joints the bricks "should not be merely laid, but every one should be rubbed and pressed down in such a manner as to force the mortar into the pores of the brick and to produce the maximum adhesion. For the best work it is specified that the brick shall be laid with a 'shove joint,' that is, that the brick shall be first laid so as to project over the one below, and be pressed into the mortar and then shoved into its final position.

"Since brick have great avidity for water, it is best to dampen them before laying. To get the greatest strength the mortar should have only enough water to make a stiff paste—the less water the better. If the mortar is stiff and the brick dry, the latter absorb the water so rapidly that the mortar does not set properly, and will crumble in the fingers when dry. Neglect in this particular is the cause of most of the failures in brick work. Since an excess of water in the brick can do no harm, it is best to thoroughly drench them with water be-

fore laying. Wetting the brick before laying will also remove the dust from the surface, which otherwise would prevent perfect adhesion." (Baker, Masonry Construction.)

Choice of Lime Mortar and Cement Mortar

359. What considerations would determine your choice between lime mortar and cement mortar for use in any given job of brick or stone masonry?

Ans. Since there are certain conditions under which lime mortar will not harden and other conditions which are unfavorable to the durability of cement mortar, the main consideration in determining the choice between the two in any given case is that of the conditions to which the brickwork is to be subjected.

Lime mortar will not harden when cut off from access of air, or when exposed to water or to moist earth or air. It should, therefore, never be used in masonry work underground, in damp places and in thick walls, to the middle of which the air cannot penetrate, all such masonry being laid with cement mortar. Under the head of damp places must be included the top four or five courses of all brick walls, which should always be laid with cement mortar, even though lime mortar is employed for the rest of the work.

Use of Cement Mortar

Cement mortar, on its part, will not be durable when exposed to even moderate heat and so deprived of the moisture that is necessary to enable it to set and grow harder with age. It must, therefore, give place to lime mortar in that part of the brickwork of retort sacks, boiler settings and chimneys where it is not necessary to use fire clay on account of exposure to high heat.

When the conditions are such that either kind of mortar will set, the most important consideration in determining the choice between them is the strength that the masonry is required to have. Lime mortar is not as strong as cement mortar, and the latter must therefore be used whenever the strength requirements are greater than can be met by the former. It is also necessary to use cement mortar in masonry subject to vibration, such as the foundations of steam engines and other moving machinery, as in such masonry it is necessary to have adhesion between the mortar and the brick or stone as strong as possible, and cement mortar is stronger in this respect than lime mortar.

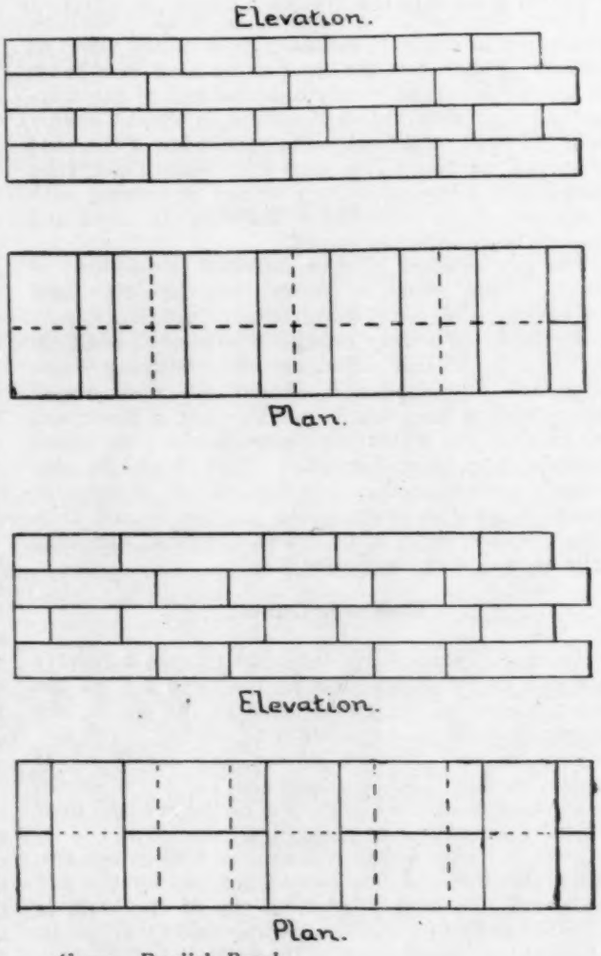
The Cost Factor

Where lime mortar will set satisfactorily and is sufficiently strong for the requirements, the consideration that usually determines the choice is cheapness, and as a rule lime mortar is the cheapest. But by properly proportioning the amount of sand used with cement, it is often possible to make a mortar that is as cheap as lime mortar, and stronger. The cement mortar can also be cheapened by mixing it with lime paste, and if the amount of this paste is not made greater than one-fourth of the combined amount of lime and cement, the resulting mortar will be stronger and better than lime mortar. But when there is not much difference between the cost of lime mortar and cement mortar without any admixture of lime, it is better to use the latter, since it is much more durable and will cost less for repairs.

Bond

360. What is meant by the term "bond" as used in speaking of brick-work? What is English Bond? What is Flemish Bond? Give sketches as well as descriptions.

Ans. "Bond" in brick-work denotes the uniform system in accordance with which the bricks are placed in the wall.



Above—English Bond.
Below—Flemish Bond.

(Seventy-seventh Installment Next Week)

HOUSEHEATING AND INDUSTRIAL GAS

(Continued from page 546)

lessened demand would go to take care of the supplemental and uncontrolled heating load demanded by other customers. When we started in to develop these burners we made a list of all the objectionable features of all the present oil burners and started out to build a burner 100 per cent perfect. This we believe we have done. We also strove to build a burner that would burn any oil that would flow and that could burn any kind of oil indiscriminately without any readjustment of the burner whatever. We have not succeeded in burning the heavier grades of oil, nor in changing from one oil to another without burning a certain amount of gas with our oil, but the amount of gas required to give proper behavior from the oil is small, and while we cannot as yet promise you a burner that will make no demand on your lines on days of extremely low temperature, nevertheless, we can make this demand so small as to be unimportant.

Price Equilibrium Between Gas and Oil

Now by using the first burner as an example, the one which maintains a constant rate of consumption gas, I will try and show how price equilibrium between gas and oil would be secured. If you assume a charge for your demand expenses of 50 cents a cubic foot of hourly demand and a consumption charge of 50 cents per thousand cubic feet of gas, both adjusted for gases of different B.t.u. density to 1,000 B.t.u. per cubic foot, then the average cost of gas to the customer ranges from 55.7 cents per thousand cubic feet for a demand used every hour in the year to $5,000.02 per thousand cubic feet if he uses his demand but one hour of the year. Making a wide range of cost and the price of oil would fix the point where it became cheaper to use oil for low load factor business rather than to pay the larger demand charge for gas.

In the tabulation which follows I have assumed that seven gallons of oil are equivalent to 1,000 cubic feet of gas:

Hours Use	Load Factor Per cent	Average cost of gas	Equivalent cost of oil per gallon
8760	100	$ .5571	$ .0796
7884	90	.5634	.0805
7008	80	.5713	.0816
6132	70	.5815	.0831
5256	60	.5951	.0850
4380	50	.6141	.0877
3504	40	.6427	.0918
2628	30	.6902	.0986
1752	20	.7853	.1122
876	10	1.0071	.1439
701	8	1.2133	.1733
526	6	1.4506	.2072
438	5	1.6418	.2345
350	4	1.9286	2.2755
263	3	2.4011	.3430
175	2	3.3571	.4796
87.6	1	6.2077	.8868

In the next tabulation which follows I have assumed a gas rate of 40 cents per cubic foot of demand and a commodity rate of 40 cents per thousand cubic feet:

Hours per Yr.	Load Factor per cent	Average cost of gas per M. cu. ft.	Equivalent Cost of Oil
8760	100	$ .4457	$ .0637
7884	90	.4507	.0644
7008	80	.4571	.0653
6132	70	.4652	.0665
5256	60	.4761	.0680
4380	50	.4913	.0702
3504	40	.5142	.0735
2628	30	.5522	.0789
1752	20	.6283	.0898
876	10	.8566	.1224
701	7	.9706	.1387
526	6	1.1605	.1658
438	5	1.3132	.1876
350	4	1.5429	.2204
263	3	1.9209	.2744
175	2	2.6857	.3837
87.6	1	4.9662	.7095

The Second Burner

Now taking up the second burner I have described, you are not only free from carrying the peaks of the house-heating load, but your consumption drops at the time of your maximum simultaneous peak. If you figure your load factor based only on the customer's demand at the time of your peak, you will find you have more than a 100 per cent load factor. In other words, this business, up to a large percentage of your total business, will be of more value to you than a customer burning a constant amount of gas throughout every hour of the year.

Without going into the engineering details, you can see how oil can be used in connection with your industrial load. If it were a practical thing to do and you could get the consent of your large industrial users, you can figure what you could afford to pay for oil if you could get your industrial customer to cut off gas and use oil whenever the temperature dropped below a certain point.

We may even find that it will pay to supply our large industrial customers with some form of industrial gas during the house-heating season. In some cities you could reach the bulk of all of your industrial gas load by a duplicate set of gas mains that would not represent anything like 5 per cent of the total mains in your city. During the winter months you could supply your industrial load entirely with artificial gas or oil, depending upon the relative cost, and in the summer time supply this industrial load again with natural gas. With a large number of house-heating burners using a combination of gas and oil, you can carry either a large amount of your house-heating load with gas or a large amount with oil, depending upon the price of oil or depending upon your supply of natural gas. We could also make it possible for you to quickly readjust these burners during the heating season to take care of any unexpected changes in supply or any unexpected changes in price.

MAKING GAS IN VERTICAL RETORTS

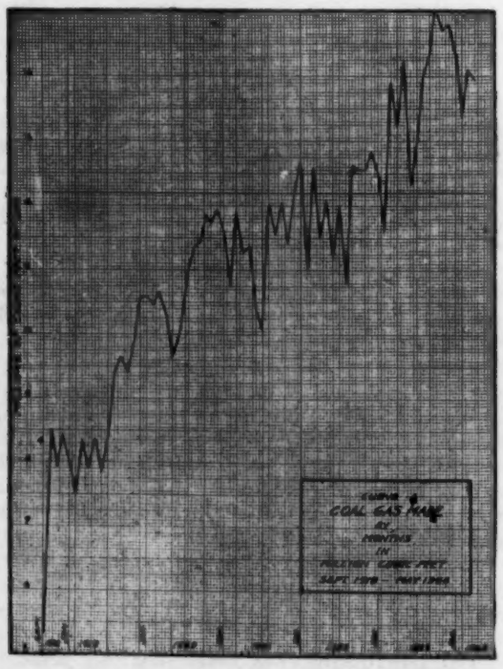
(Continued on page 548)

we have three, using them in series. The gas then goes to a wet type meter and passes into the station holder, which has a capacity of 500,000 cubic feet.

In addition to the above coal gas plant, we have a small four-foot water gas set equipped with a five-foot generator. This is almost the equivalent of a complete five-foot set operating on the B.t.u. basis that we are required to operate in this state.

Operating Results

In order to give an idea of the results we obtained from this vertical retort plant, we have drawn up a number of curves showing the various yields, prices and costs covering the period in which this plant has been in operation. This period covers five and one-



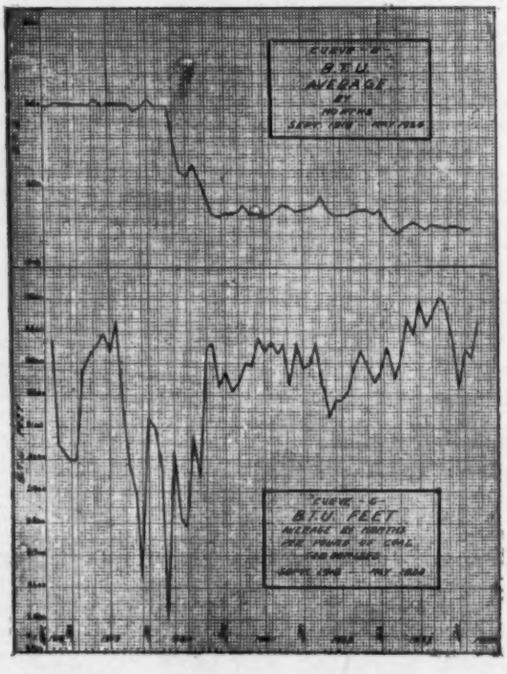
half years and all sorts of conditions, prosperity and depression, high prices and low prices, good coal and poor coal, seasonal and weekly variations in demand, so naturally the curves fluctuate considerably. But in our analysis we shall not attempt to explain all the fluctuations, but merely those which are necessary to give a correct interpretation of our subject and those reflecting experiences which may be peculiar to this type of plant.

Gas Made—Curve A:

This curve shows coal gas made in millions of cubic feet per month. Beginning with the operation of the new plant, it shows a gradual increase to keep pace with the increase in demand. Seasonal fluctuations in demand and variations in length of months are responsible for the irregularities in the curve and on several occasions very poor coal was encountered, which resulted in decreased gas make. The horizontal dotted line shows the rated capacity of the plant on which purchase was based. It will be noted that the capacity of the plant was exceeded for several months in 1922 and was continually exceeded after February, 1923, the peak being reached in October, 1923, when the plant was operated at 23.2 per cent above its rated capacity. A drop in make followed this with the advent of cold weather and wet coal, which required an excessive amount of heat for carbonization.

Average B.t.u. and B.t.u. Feet by Months—Curve B and C

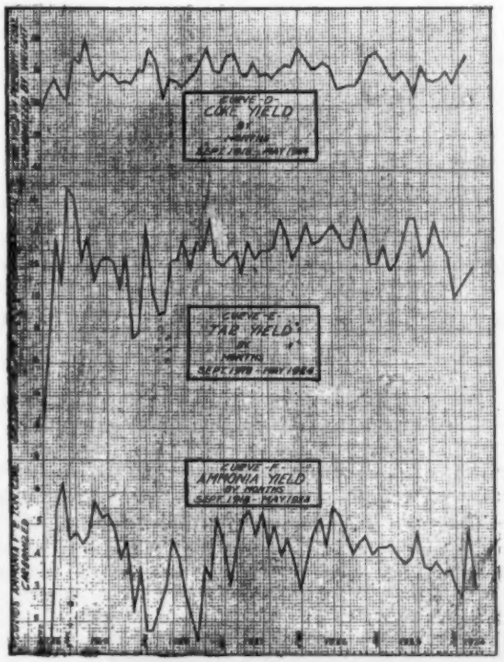
Curve B shows average B.t.u. of gas by months. During the early part of the period covered by the curve the standard set by the state was 600 B.t.u. per cubic foot. This standard was reduced to 520 in 1920 and the curve illustrates that we made the adjustment very gradually, reducing from 600 to 575 in May, 1920, then to 555 in June, 1920, where we remained for several months to observe the effect and make the necessary adjustments to appliances which the change might call for. We then gradually reduced to 535. During the period of this adjustment our yield advanced from an average of about 5.0 cu. ft. per pound of coal to an average of about



6.2 cu. ft. per pound and, as curve C shows, B.t.u. feet per pound of coal advanced from 3,000 to 3,300.

At the lower standard we were able to increase the vacuum on our hydraulic mains, keeping atmospheric pressure in the retorts and eliminating leakage about the doors. This assisted in increasing the yield.

In changing from 535 B.t.u. to 525, which the curve shows we did in February, 1923, we notice that yield and B.t.u. feet took another appreciable jump. A different method was followed in making this change. That is, producer gas was mixed with the coal gas. Our producer gas has a heating value of about 110 B.t.u. per cu. ft., and is responsible for the increased yield and B.t.u. feet. This increased the capacity of our plant considerably and assisted in getting much more than rated capacity from it as



will be shown later. During the winter 1923 and 1924, when an excessive amount of heat was required for heating the benches on account of frozen and wet coal, we found that we did not have producer gas to spare for mixing with coal gas.

Yield of Coke—Curve D

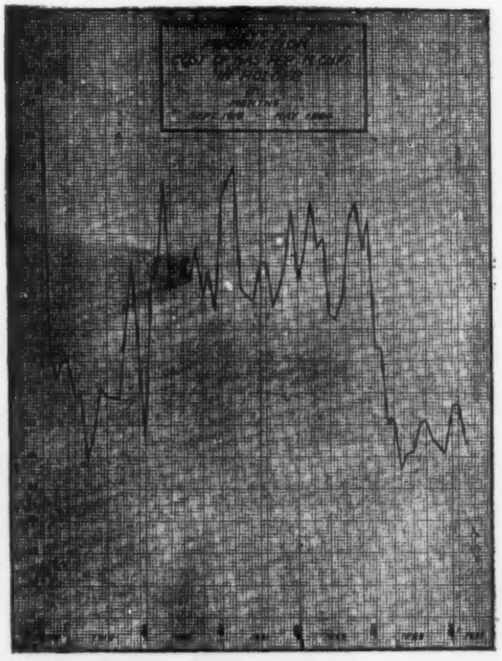
The coke yield is high and the coke is of a very high grade, as shown by the photograph. On account of the coal being crushed, the heats high and uniform, and a heavy pressure on the coal while carbonizing, the resulting coke is very dense and hard. The structure is of a fingery nature and practically no breeze is made. The coke is exceptionally high grade and competes with any coke brought into the local markets.

Yield of Tar—Curve E

Curve E shows tar yield in gallons per ton of coal carbonized. Fluctuations are due to quality of coal and allowable inventory errors, and the fact that the plant had to take care of all weekly and seasonal variations in demand. The quality of the tar from this vertical retort installation is worthy of comment. It is of a very high grade, containing more than double the tar acid content of other types of plants.

Cost of Gas in the Holder—Curve L

Curve L shows cost of gas per thousand cubic feet in the holder. This, of course, is only a small part of the total cost of the gas, as it does not include overhead, taxes, depreciation, office supervision, or promotion of business, but is merely labor and material entering into cost of manufacture. It would obviously be impracticable to try to explain all the irregularities in this curve, as many are due to an increase in repair work in one month over another, etc., so merely an explanation of the extreme conditions will be attempted. The curve shows seasonal fluctuations, reflecting the cost of steam and high bench fuel in the winter time. The increase from March, 1919, to April, 1920, is due in part to the increase in rate of wages paid labor during this period, and in part to poor coal. The cost of gas continued to remain at a fairly high level until December, 1922, due to high cost of coal. This is not as it should be, as one of the inherent advantages of coal gas over water gas manufacture is that fluctuations in the cost of raw materials may be recuperated to large extent by corresponding fluctuations in the credit which may be secured from residuals. This was due mainly to the fact that our coke market had not been worked up sufficiently to enable us to keep in line with the high price of coal. This condition was then corrected so that from December, 1922, to the present date the residuals



credits have averaged higher than the cost of coal and with the excellent grade of coke made in this type of gas plant, we will undoubtedly be able to maintain this average. It certainly reflects very materially on the holder cost of gas, as is shown on curve K after December, 1922.

FUNDAMENTALS OF GOOD WILL BUILDING

(Continued from page 550)

ests of better understanding and good-will for his company.

Need of Advertising

Utilities should advertise—yes, with capital letters. When? All the time!

To wait until we are confronted with a rate adjustment, a misinformed, and consequently, indignant public opinion, to begin our advertising and publicity work, is almost fatal.

Our business is continuous, it is constantly improving, therefore our advertising should be constant and in keeping with this progress.

What to Advertise

What should we advertise? Every phase of our business; the value of the service we render; the aids to its more efficient and satisfactory use; the justness and equity of our rates; the ideals and policy of our business.

Every phase of our business touches or is affected by some form of human service. Hence the human side of our business always appeals to other human beings. Indeed, if there is one thing of more vital importance to our industry than anything else it is that process of keeping the human side ever before our customers and the public.

How can we advertise?

Newspapers? Yes!

The Newspaper

Of all the agencies for the dissemination of understanding the newspaper takes first rank—your local newspaper. It reaches your customers, as well as the element we call "the public," and while your advertising is "paid copy," the very fact that it is printed in the newspaper lends it a certain prestige, carries a certain convincing appeal that can be obtained through no other medium.

Direct Mail

Next to the newspaper, the local utility has the greatest advertising circulation in the community—its customers. Folders and cards for mailing with the monthly bills, for distribution by the cashier, by the meter man, the repair man, the merchandise salesman and the service man. Once every month, at least, some such folder or card, containing service helps, an explanation of some phase of your business and its problems can be placed in the hands of your customers.

EXHIBITION PROSPECTUS OF 1925 CONVENTION

The American Gas Association has just issued an exhibition prospectus of the seventh annual convention and exhibition of the American Gas Association, which will be held in Atlantic City, October 12 to 16, inclusive. This prospectus contains in detail the various rules and regulations that will govern the exhibition. It also has a plan view of the Steel Pier, showing the arrangements of bootrs.

A Good Example of an English Window Display (Note the Gas Lamps Inside and Outside the Window)

SELLING GOOD WILL AT A PROFIT

(Continued from page 552)

which will help build GOOD WILL for the company.

In order to secure the fullest co-operation and GOOD WILL of your neighbor, the dealer, it becomes necessary that you not only produce a market for your merchandise, but to so price your merchandise that the local dealer will become interested in the sale of gas-consuming appliances at a profit to himself.

It should be borne in mind that the game cannot be played alone. The day is not long enough, neither can you blow your own horn loud enough to enable you to sell all of the gas-consuming merchandise the people in your community will buy, but it will be of great profit when it is realized that more utility products will be used if the dealer becomes interested in offering gas-consuming appliances in place of coal, oil, etc., burning appliances. The dealer will participate and help blow your horn if you permit him to profit.

GAS FOR VOLUME COOKING

(Continued from page 544)

cooking equipment, is susceptible to the suggestion to use other than gas for cooking fuels.

You can see that the problem of the hotel and restaurant gas sales engineers is different than the ordinary sales organization. The usual problem is to find the market and properly present your product to that market. We have a market that is using our product, but at the same time not satisfied with our service. If there was a fuel on the market that could compete with gas we would have lost to a large measure our commercial cooking load.

It is our problem to re-educate the customers in the proper use of gas for commercial cooking.

The teacher of voice will tell you that a voice improperly trained is harder to cultivate than one that has had no training. If you ever learned to typewrite, using two fingers, you know that it is impossible, or nearly so, to use the touch system.

It is the problem of the hotel and restaurant gas sales engineer tactfully to associate himself with this wrongly trained, prejudiced user of gas and re-educate him against his will, in a good many cases, into becoming an efficient, satisfied gas customer.

You will agree with me that this is a task worthy of the efforts of the highest grade individual.

HOUSE HEATING BY GAS NOW AN ACCOMPLISHED FACT

The increase in gas-fired house heating systems has averaged more than 2,000 per cent since 1919, says a statistical report just issued by the American Gas Association, which points out that the gas companies throughout the country, having passed through all the stages of development from a lighting to a heating business, are rapidly supplying a considerable portion of the heating requirements in the home, as well as in industry.

"A summary of the percentage sales of the leading manufacturers of gas-fired house heating systems," according to the report, "shows that the biggest increases have come since 1921, which was a rather poor year. One of the largest concerns in this field made nearly 50,000 house heating installations last year alone, which, for this company, was an increase of 6,000 per cent over 1919.

"At the present time there are only two practical methods whereby automatic heating is possible, namely, by means of oil and by means of gas. As long as oil prices remain low, the oil furnace presents a certain economy of operation not attained by gas sold under existing rate schedules. But the tendency of gas rates for this purpose is generally downward, and there are so many features that render gas superior as a heating medium that the temporary difference in cost is more than equalized. Intensive selling campaigns instituted by some of the leading gas companies in the country are making these facts known to hundreds of thousands of consumers.

"In compiling information on the use of gas for house heating it was discovered that even in those cities where gas house heating is still, comparatively, in its infancy, gas users turn to their ranges or room heaters to supply them with heat on cold mornings and evenings in the fall and winter when their boiler is not supplying them with warmth. This application is really house heating by gas on a more or less primitive scale, and is probably one of the largest contributing factors to the severe peak loads which occur at the gas plant on unseasonably cold days.

An Up-to-Date Domestic Kitchen as Construed by an English Gas Company

Consideration Asked from Gas Men

R. M. Chatterton deplores lack of sufficient interest in industrial research

Editor of The American Gas Journal:

My attention has just been brought to the article in the March 7th issue by Mr. Lobell. I am in hearty accord with many of the statements made, especially as regards the necessity of research and development work, if the industrial heating business is to be developed for the use of gas.

Our company has a great many problems put up to it for solution, but there is seldom enough business in sight to pay for the cost of development work, unless the gas companies or someone interested in both the use and production of the gas would be willing to stand a part of the expense.

Most industrial concerns using furnaces have men in their own employ who have their own ideas about furnace design, which makes it very difficult, if not impossible, in many cases, to get a good hearing for new methods of applying heat. This fact, together with the lack of interest of many gas men, has a great deal to do with the slow development of the use of gas in efficient ways as compared with the use of electricity.

Within a year we have had an experience which illustrates this very well. A certain concern in this city had been using electric furnaces for several years on a special heating job. Temperatures were high and must be accurately controlled. Electricity was expensive, upkeep of the furnace very costly and the product not always satisfactory. The problem of designing an efficient gas furnace to do this same work was put up to us. We designed and built such a furnace, which is turning out the same work at about one-third of the cost of the electric furnace. The electric furnaces have been abandoned and so far there has been absolutely no upkeep.

This furnace shows an efficiency of approximately 35 per cent. Stack gases are discharged to the air at less than 800 degrees Fahrenheit. Everyone agrees that this is a wonderful furnace and that the principle could be applied to many other heating operations, but either we are poor salesmen or gas companies and gas users are not interested in learning how to do work in a most efficient manner.

No one has been able to present any arguments against this furnace as compared with electric furnace, because we have duplicated the atmospheric conditions and temperature control, and the operator can handle the gas furnace with greater comfort than the electric furnace. The product is cheaper and is practically 100 per cent perfect.

There are thousands of instances like this in the country where gas should be used and is more desirable than any other fuel. The question that the writer would like to see answered is why the gas industry cannot get together in some progressive and aggressive program to show that they at least have as much right to consideration as the people who have electricity to sell.

R. M. CHATTERTON.

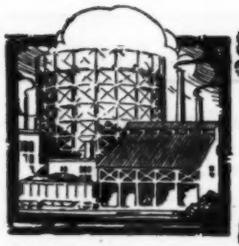
THE VALUE OF A SALES FORCE TO A GAS CO.

The three-minute speaking contest staged by the Commercial Section at the convention was one of the outstanding features of the meeting. We are publishing here, for the first time, the winning talk made by Mr. J. Earl Jones, assistant sales manager of the Portland Gas and Coke Company:

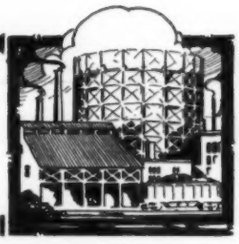
"Distribution or marketing is the most important single factor in the gas industry today. A few years ago production was the chief factor of growth. Adequate financing was also important to production. In fact, anything that could be produced at a reasonable cost could be sold, but today conditions are different. In the light of present business and highly efficient production facilities, anything that can be sold can be produced. First, find or create your market, and then produce according to your market's specifications. Adequate financing is available for any legitimate or promising public utility, and while we recognize production as vitally necessary to a successful gas company, nevertheless, we must face this one great question, 'Can the service be sold in satisfactory volume at a profit?'

"Advertising and personal salesmanship are subdivisions of marketing; they are not separate or distinct; one supplements the other; they are integral parts of the distribution system. Advertising creates public confidence and good will. It broadcasts a portion of the salesman's message, but it remains for the personal salesman to go out and crystallize that favorable public sentiment into actual orders and bring home the bacon. The sales force of a gas company is the motive power that sells the gas company's service. It is the connecting link between the gas company and the consumer. It might be compared to an important member of a public utility tree, and unless that important member functions, the public utility tree will not bear fruit. A gas company without a sales organization is like a grain farmer without a harvesting crew. In reality, the sales department is the mouthpiece of the gas company.

"I hold no defense for a poor sales organization; the gas company is better off without it. There is no room in modern business for the order taker or for the hail, well-met good fellow of the old school. That is past history and must be relegated to the past. My challenge, honorable judges, ladies and gentlemen, is for a highly efficient, highly trained personal sales force that is able to go out and to visualize for the customer the many advantages of the gas company's service, and not only be able to sustain the present customer clientele and secure new business, but also to be able to secure good will, dignity and prestige for its company in the community which it serves. Such a sales force is indispensable to a gas company.



NEWS OF THE GAS INDUSTRY



Empire State Gas Men Meet at Schenectady

Commercial Section Holds Annual Meeting

Executives of practically all the gas and electric companies of the State convened for a two-day annual meeting of the Connecticut Section of the Empire State Gas and Electric Association at Schenectady, N. Y., June 24 and 25, 1925. The sessions were held in the Hotel Van Curler.

House heating by gas was discussed, as was advertising in newspapers and its bearing on the public relations of the companies. The latter was the topic of Stevenson H. Evans. Colonel Oscar H. Fogg, vice-president of the Consolidated Gas Company of New York, told of the efforts of the companies to train their employees for better public service.

Mrs. Pauline L. Rohrs, supervisor of home service, Associated Gas and Electric Companies, explained the work the companies are doing to teach their women customers how to handle all the modern domestic labor-saving devices to their advantage. Other papers were presented by Fred M. Kimball, General Electric Company; Charles H. Churchill, Adirondack Power and Light Corporation; O. B. Anderson, Edison Lamp Works, and G. Leigh Whitelaw of the A. H. Wolff Company. W. J. Reagan of the Utica Gas and Electric Company was chairman of the sessions.

Future of the Gas Industry to Be Keynote of Annual Convention

"The Future of the Gas Industry" will be the dominant theme of the Seventh Annual Convention of the American Gas Association, to be held on the Steel Pier, Atlantic City, October 12 to 16, 1925. According to information issued by headquarters office of the associaion, the entire convention program, including sectional as well as general sessions, will be built around the central thought of the gas industry of tomorrow.

The official opening of the convention will take place on Monday, October 12, when the exhibit of appliances, machinery and apparatus under the auspices of the Manufacturers Section will be thrown open for inspection. In view of the heavy registration which always takes place on Monday of the convention week, there will be only one meeting that day —the Managing Committee of the Manufacturers Section.

The Exhibition Committee reports that more space is available this year for exhibits than ever before, owing to the extensive improvements made on the Steel Pier by its owners, following the recent fire. There is room this year to accommodate 257 booths, as against 230 last year. A total of 182 exhibitors were taken care of last year. At the time of going to press with this article 168 exhibitors had contracted for space, which figure gives a good idea of the great interest being displayed in this year's "gas style show," as some of the manufacturers call it. Instead of its usual meeting on Thursday afternoon of convention week, the Commercial Section will devote that time to an inspection of the exhibition.

Tentative plans for the program have general meetings scheduled for Tuesday, Wednesday and Thursday mornings, with sectional meetings on the afternoons of those days, the single exception being the Commercial Section, which meets on the afternoons of the first two days only. A special attempt is being made this year to reduce routine convention business to the minimum and to have the sessions entirely devoted to a consideration of the general theme and its application to existing problems of the industry. For example, the first general session will concern itself with the general aspects of the theme and the detail affecting processes and materials. The second session will follow with emphasis on the commercial, industrial and financial aspects of the future, and so on. Discussion of specific matters will be left to the sectional meetings, as heretofore, but they, too, will have the future of the gas industry as their central theme.

In addition to the Public Relations Symposium, to be held on Wednesday evening, particular attention is being paid to the State public utility information work. Present plans call for a National Conference on Information Committee work for Wednesday and Thursday afternoons, under the auspices of the Publicity and Advertising Section. Speakers for these two important meetings will include some of the best known utility executives in the country.

Gas Co. Asks Industrial Rate Boost

Dallas, Tex.—An increase in rates for natural gas for industrial use amounting to approximately 6 per cent to three classes of users was asked by the Dallas Gas Company in a petition filed with the City Commission.

The company has five classes of industrial users classified according to the amount of gas used and according to priority considered when a shortage threatens the supply. The increase applies only to third, fourth and fifth classes, which are the heaviest users.

R. A. Crawford, vice-president and general manager of the Lone Star Company, said the increase is being asked because the cost of other kinds of fuel have increased.

"We sell industrial gas in competition with coal and other fuel," said Mr. Crawford. "The price of gas naturally falls and rises as the prices of these fuels fluctuate."

The rates for industrial gas are arranged in an elaborate sliding scale, with a separate schedule for each class of business. The new schedules requested by the Dallas Gas Company, the maximum price to all classes is 55.56 cents a thousand feet; the minimum price to the heaviest user under the new schedule will be 17.78 cents a thousand cubic feet for the first 100,000,000 feet.

Penn Yan Gas Co. Sells to N. Y. Central Electric Co.

Penn Yan, N. Y.—A contract has been signed selling out the Penn Yan Gas Light Company, which has furnished artificial gas for lighting and heating purposes in Penn Yan for the past 65 years, to the New York Central Electric Corporation. The board of directors of the local concern are scheduled to meet the latter part of this month to pass upon this act and then the matter goes before the Public Service Commission at Albany and must receive sanction there before it goes into legal effect and the New York Central Electric can take charge of the gas companys' plant.

On May 12, 1860, the Penn Yan Gas Light Company was organized with D. A. Ogden, L. O. Dunning, George McAllister, Samuel H. Welles, John McDougall and Charles M. Stark as incorporators, and with D. A. Ogden, C. M. Stark, S. H. Welles, J. McDougall and Andrew J. Avery as the first directors. The first officers were D. A. Ogden, president, and S. H. Welles, secretary and treasurer. On May 11 the contract was let to McDougall and Avery of Hornell, who built the plant on Jackson street on the site of the present residence of Frank Dallas. The gas was turned on and distributed in the village for the first time on October 1, 1860.

When Darius A. Ogden resigned as director of the company, Daniel Morris became president and William T. Morris secretary and treasurer. The latter bought the property from its owners on June 30, 1888, and later moved the plant to its present site on Water street along the shores of the outlet. This site had been occupied before that time by the Tuthill malt house, which burned a few years before. In 1896 Mr. Morris secured a land grant on the property. Finally, following Mr. Tuthill's business failure and that of his successor, Mr. Hicks, Mary A. Conklin conveyed a deed of the property to the gas company in the winter of 1897-98.

Morris Tracy, of Geneva, is now president of the company, and L. E. Tracy is secretary and treasurer.

Frank J. Pfeiffer Made Asst. Gen. Auditor of Louisville Gas & Electric Co.

Louisville, Ky.—Announcement of the appointment of Frank J. Pfeiffer as assistant general auditor of the Louisville Gas & Electric Company has been made. Mr. Pfeiffer has been in the employ of the company since his graduation from the Manual Training High School in 1909, and the promotion is only one of many that has come to him in recent years.

He was first employed in the commercial and appliance department and later in the auditing and collection department. In October, 1912, Mr. Pfeiffer was promoted to paymaster and in January, 1922, he was appointed stores accountant and has served in that capacity until the latest promotion. In his new position Mr. Pfeiffer will take over many of the duties formerly handled by Mr. McKenna, who was recently promoted from general auditor to secretary-treasurer.

Minneapolis Gas Rates Reduced

Minneapolis, Minn.—The price of gas to private consumers has been reduced one cent for the four months' period beginning May 1, which will result in a total saving of $12,000 to local users for that period, according to an announcement by the Minneapolis Gas Light Company. The present rate is now 95 cents per 1,000 cubic feet.

The new rate is the lowest charged by the Minneapolis company since 1919, when the 95 cents rate prevailed. The peak of gas prices since that time was reached in 1921, when the price was $1.31.

The holder cost of gas for the four-month period ending February 28, 1925, was 47.07 cents, as compared with 47.16 for the preceding four-month period.

The reduction of one cent, based on the annual consumption of gas means about $36,000 savings for the consumers for the year, according to D. D. Meeds, gas inspector.

Charles S. Ruffner Elected President of Mohawk-Hudson Power Corporation

Albany, N. Y.—Charles S. Ruffner, vice-president and general manager of the Adirondack Power and Light Corporation, Schenectady, has been elected president of the Mohawk-Hudson Power Corporation, the $100,000,000 utilities holding company, now seeking authority to acquire the capital stock of five utility corporations serving the Mohawk and upper Hudson valleys.

U. S. Army Equips World's Largest Warehouse with Gas

The largest warehouse in the world, belonging to the United States Army Base in Brooklyn, N. Y., will use city gas exclusively as fuel for roasting coffee for the Eastern division. For this purpose a six-inch service main has been run to the warehouse from the mains of the Brooklyn Union Gas Company.

The gas company has also installed gas-fired ovens and burners which will be used in connection with an immersion tank heater. These appliances will be used in the utility division for the medical section enameling plant. Their particular use is to clean beds in a cleaning solution and to bake enamel on the beds after being painted.

Changes in So. California Gas Co.

The executive committee of the board of directors of the Southern California Gas Company have made several changes in titles. A. B. Masbeth is now executive vice-president of both the Southern California Gas Company and the Midway Gas Company, and W. B. Holmes, who has to the present been assistant secretary of the Southern as well as the Midway, is now vice-president and assistant secretary of the Southern. F. J. Schafer becomes general manager of the Southern and William Moeller, Jr., general manager of the Midway.

Office Removal Notice

On and after June 22 the principal offices of the Business Research Corporation will be at 79 West Monroe street, in the Chicago Trust Building, Chicago, Ill.

New Gas Distribution System in Clinton

Albany, N. Y.—The Utica Gas & Electric Company petitioned the Public Service Commission asking permission to construct and operate a gas distribution system in Clinton. The company will extend its mains from the present terminal at New Hartford and pipe gas through a four-inch main under high pressure and by means of a reducing governor distribute the gas through medium high pressure system in that village. There are about 350 prospective users of gas in the village.

A. E. Creviston Appointed Sales Manager

Mr. A. E. Creviston, formerly Southern representative of the Oriole Division of the Standard Gas Equipment Corporation, has been appointed sales manager and takes the place of Mr. J. D. Taylor, Sr., who has resigned. Mr. Creviston will be at the headquarters of the Oriole Division, Baltimore, Md.

Minneapolis Gas Co. to Make Improvements

Minneapolis, Minn. — Expenditures totaling $600,000 are to be completed this season for improvements, according to an announcement by the Minneapolis Gas Light Company, which now serves 110,000 homes and industries and has 682 miles of gas mains. The announcement was authorized by Arthur Rand, vice-president and general manager of the company.

The company plans to lay 25 to 30 miles of mains, including several high pressure mains, and to expend $4,500 for additional installations of service.

To finance this construction program the company is offering $1,000,000 of preferred stock, which may be purchased on the installment plan. The company is increasing its paid-up capital $1,000,000, from $800,000 to $1,800,000.

A. T. Rand is president of the company and chairman of the board of directors, and Arthur Rand is vice-president and general manager. Rufus R. Rand, Jr., is vice-president, E. W. Bruce secretary and treasurer, and, with J. B. Klumpp of Philadelphia, constitute the board of directors.

Public Utility Bond Issue Oversubscribed

The unusual situation of a public utility bond issue being subscribed more than five times over was reported in the case of the Twin State Gas & Electric Company, a company supplying gas and electricity in Brattleboro, Bennington and other New Hampshire towns. An offering of $1,900,000 5½ per cent mortgage gold bonds of this concern resulted in orders for more than $10,000,000 of the bonds, the orders coming from banks, dealers and investors. It was reported that banks in Chicago alone sent in orders for $5,000,000 bonds.

J. L. Hees Resigns as President of Adirondack Power & Light Corporation

Albany, N. Y.—J. Leslie Hees of Gloversville has resigned as president of the Adirondack Power and Light Corporation. His successor has not been appointed. It is likely, it is said, that Mr. Hees' duties will be taken over by Mr. Ruffner as vice-president and general manager, pending consummation of the Mohawk-Hudson unification.

Wisconsin Gas Companies Add 13,000 Patrons

Milwaukee, Wis. — Gas companies in the State are making a steady growth. A gain of about 13,000 new customers during the last year is shown in a survey of the 25 gas companies in Wisconsin made by the Railroad Commission. There are now 253,132 gas users in the State. Gas property investments increased $3,000,000 in the same period, bringing the total to $37,572,000.

Nearly one-half of the people in the State cook their food with gas. Homes and industries use more than 10,000,000,000 cubic feet of gas during the year, enough to supply the average customer for 226,832 years.

Contracts Awarded

The Tampa (Fla.) Gas Company is preparing to increase the condenser capacity of its plant and has awarded the contract to the U. G. I. Contracting Company of Philadelphia for the installation of one U. G. I. high duty condenser, with the necessary connections, temperature control and other parts. The condenser will be of the eight pass type 6 ft. by 18 ft. by 28 ft. high. This condenser is one of the new type that the U. G. I. has lately developed and which is proving very successful in operation.

The U. G. I. Contracting Company of Philadelphia has lately received word from Middletown (Conn.) Gas Light Company to remodel its water gas apparatus.

The equipment is complete with auxiliary apparatus and will be of the cone top type and for automatic operation.

The New Orleans Public Service, Inc., New Orleans, La., is extending its gas generating capacity and has placed contract with the Gas Machinery Company of Cleveland, Ohio, for an eleven-foot water gas apparatus.

The water gas apparatus is to be complete with overhead operating floor, air and steam meters, pyrometer, explosion check valve, automatic control and auxiliary equipment.

The contract also includes a Wickes vertical water tube waste heat boiler and its necessary auxiliary equipment.

This new water gas set and waste heat boiler equipment will be installed in an extension to the present building, adjoining the present water gas generator room.

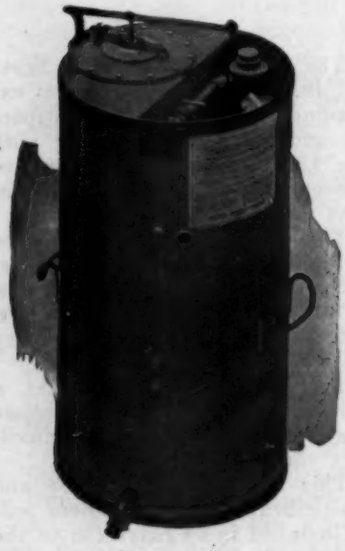
The Rochester Gas & Electric Corporation, Rochester, N. Y., has placed a contract with the Koppers Company covering the design and erection of a coal gas plant to have a capacity of approximately 5,000,000 cubic feet of coal gas per day. The plant will consist of 37 Koppers Company's Becker Type by-product gas ovens and 4 Koppers Type gas producers.

New Portable Acetylene Generator

A small generator for producing acetylene at low pressure for welding and cutting has recently been developed by the Axweld Acetylene Company, 32 East 42nd street, New York. This supplements a line of larger generators, a great many of which are used to supply pipe lines in shops where much cutting and welding is done.

The new generator, which takes 35 lbs. of carbide at one charge, can be transported readily from place to place, thus providing a portable supply of generated acetylene gas. Empty, the generator weighs only 210 pounds.

An entirely new principle of feed control is used which might be called a "heavier-than-water" float. A vertical partition, extending nearly to the bottom into a water seal, divides the generator



shell. One side is gas tight and contains the carbide hopper at the top. The upper part of the other side contains gas regulating and protective devices, and an automatic carbide feed control. Generation of the first acetylene causes water to rise on this side of the partition high enough to all but submerge a pan full of water, hung to a control lever. This pan normally acts as a weight acting counter to a spring, but as the water rises about it its apparent weight is diminished and the carbide hopper valve is closed by the action of the spring. As acetylene is drawn off, water rises in the gas compartment and correspondingly lowers under the float, relieves some of the buoyancy under the water pan, which, gathering weight with the receding water, depresses the spring and allows a small amount of carbide to drop into the generator and restores equilibrium coditions.

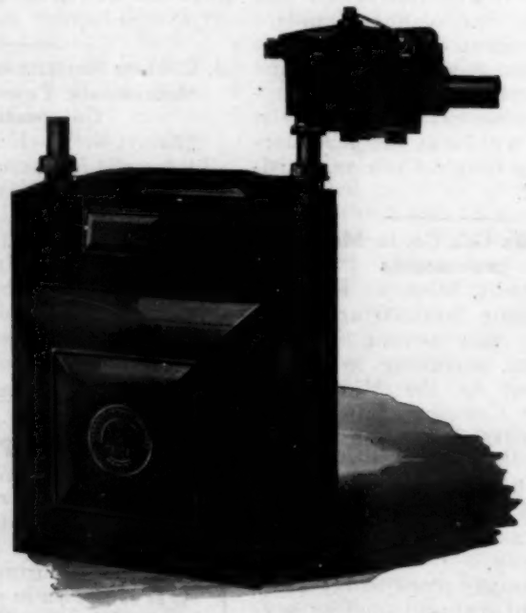
Empire Demand Meter Bulletin

The Metric Metal Works of the American Company, Inc., Erie, Pa., have just issued Bulletin No. 122, in which is described the Empire Demand Meter.

The Demand Meter is a mechanical device which automatically controls or limits the maximum rate or flow of gas which the individual customer can draw from the distributing system, and delivers the gas at a uniform pressure for all rates up to the maximum demand that he has contracted for.

The accompanying illustration shows how the Demand Meter is connected to a 10-light meter.

There are three styles of the Demand Meter being made, indicated by Style "B," Style "K" and Style "E." Each of these styles is illustrated and described in the Bulletin. Pipe sizes, connections and capacities are given, together with complete description of operation. A copy of the Bulletin will be sent on request.



Bulletin on Use of Oxide Sponge

The oxide department of E. J. Lavino & Co., Philadelphia, Pa., has issued a booklet containing instructions for the use of Lavino Sponge, and also for the preparation of Lavino Sponge. Copies of the booklet will be sent on request to the Oxide Department.

Novel Sales Campaign for Gas Ranges

The Central Indiana Gas Company of Marion, Ind., ran a cooking school recently in the High School of that city. Mr. Howard Barlow, new business manager of the gas company, was putting on a sales campaign for Roper gas ranges and he offered prizes to the High School students who wrote the best essay on the merits of this gas range. A large number of the students entered the contest, the essays being turned in to the gas company, and a committee was appointed to pass on same and award the prizes.

As a result of this essay contest a large number of people in Marion at one time or another during the contest were talking about the merits of gas ranges and it proved to be a most successful way of bringing the utility value of gas into the household and help put over the gas range sales campaign.

The Welsbach Line Makes Friends for Gas Heat

What do your customers look for in a gas heater when they come in to buy?

They are probably sold on gas heat already; they know it is quick, clean and always on the job. But what of the actual heater itself? Is the heat it gives the only consideration? Has economy of operation any influence? Or, does appearance figure most?

No matter what the individual needs and preferences of your customers, they can be met most satisfactorily with the Welsbach line.

The points that help you sell Welsbach Radiant Heaters *keep* them sold, and, what is equally important, keep gas heat sold. The superior design and workmanship result in sturdier wearing qualities and greater and more lasting heating efficiency. The pains taken with the construction, materials and positioning of all component parts of a Welsbach Radiant Heater assure absolutely dependable, complaint-free service. Every user of a Welsbach Radiant Heater becomes a booster for gas heating.

When the testing laboratories of gas companies report to their commercial departments that Welsbach Radiant Heaters, for all-around excellence, are superior to any other on the market, it's an endorsement to be proud of. And they're doing it every day!

No. 37 With Andirons
A new fireplace model, with header extending entirely to the top—an added advantage in practical utility and appearance.

No. 37 With Andirons and Wings
Both No. 37 and No. 39 (identical with No. 37 save for two additional glowers) come with or without andirons, wings and extension top.

No. 29
With Andirons
Has exposed copper reflector.

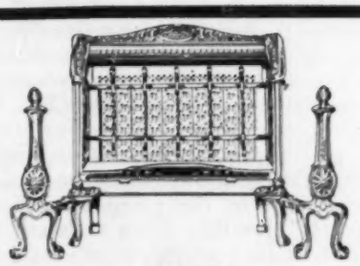
Welsbach Gas Heaters

Their unique method of producing and instantly distributing radiant heat gives to Welsbach Heaters many demonstrable advantages that readily make sales. Perfect service is assured by various exclusive features, each meaning much in added warmth, speed and convenience.

A self-lighter eliminates matches, and, with a header, provides for instant and complete ignition of all glowers. A metal reflector prevents waste and assures instant "pick-up." Perfect combustion is insured by a free flow of secondary air; a screen protecting burner openings from dust and lint; and rust- and corrosion-proof burner caps.

WELSBACH COMPANY GLOUCESTER CITY, N. J.

MEMBER AMERICAN GAS ASSOCIATION



No. 27
With Andirons
Massed glower effect.

G. W. Allen to Direct Sales of United Gas & Fuel Co.

An interesting announcement has been made by the United Gas and Fuel Company, limited, of this city, to the effect that the company is about to establish a new business department.

G. W. Allen has been appointed sales manager. Mr. Allen is well known in the public utilities field of this country and was for 13 years connected with the advertising and sales work of the Consumers Gas Company, Toronto. He is also editor of the Inter-Colonial Gas Journal of Canada, published in this city. He is a well-known lecturer on the conservation of natural resources and has made a specialty of the gas industry. Mr. Allen says that few people realize the great strides that are taking place in the gas industry, both for domestic and industrial services. Over 5,000 known uses have been found for gas, and this number is being added to almost daily.

It is to take care of the coming demand that the United Gas and Fuel Company has entered upon this new departure. "If it is done by heat, you can do it better by gas" is a slogan that has become general throughout this country, and it is to educate the public to utilizing gas to the maximum of efficiency that Mr. Allen has been engaged.

It is the objective of Mr. Allen to make Hamilton known as the gas city par excellence, as it is undoubtedly the power city of Canada.—Hamilton Spectator, Hamilton, Ont., Canada, February 2, 1925.

W. D. Stewart and Everett J. Boothby Promoted

Fall River, Mass.—Coincident with the news of the departure of Warren D. Stewart, who for the past six years has been superintendent of the Charles street plant of the Fall River Gas Works Company, to become superintendent of the gas division of the Western United Corporation, comes the announcement of the promotion of Everett J. Boothby from assistant superintendent to the superintendency of the local plant.

Those familiar with the abilities of Mr. Stewart will appreciate the opportunity afforded him in his transfer by Stone & Webster, Inc., to new and larger fields.

Mr. Stewart's rise to recognition has been very rapid. Previous to taking over the operation of the Fall River plant he was a chemist in Pawtucket with the Blackstone Valley Gas and Electric Company. Earlier he had worked with the Lowell Gas Light Company. He is a comparatively young man. His new position offers him unlimited opportunities.

Everett J. Boothby, the new superintendent of the Charles street plant, has in his three years with the Fall River Gas Works Company gained an intimate and valuable knowledge of gas plant operation. For the past year and one-half he has been the assistant superintendent, worked closely with Mr. Stewart and therefore is well qualified to take over the responsibilities of the superintendency.

Mr. Boothby graduated from Tufts College in 1915, receiving a degree in chemical engineering. Before joining Stone & Webster, Inc., he acted as department head for the New England Manufacturing Company, manufacturers of high explosives.

His likable qualities are well attested by the fact that he has just been elected as president for this year of the Bee Tee Yew Club, whose membership is made up of employees of the Fall River Gas Works Company, who are very glad to learn of his promotion.

Edward J. Cooney Elected President N. E. Commercial Gas Managers

Edward J. Cooney, sales and service manager of the Lowell Gas Light Company, Lowell, Mass., was recently elected president of the New England Association of Commercial Gas Managers. Mr. Cooney is well known in gas circles in New England and his activities in the gas field have always been tinged with a highly altruis tic character.

Gas House Heating

The Gallaher Boiler Company, St. Louis, Mo., in a circular commenting on the constantly increasing demands for house heating with gas, says:

"The factors making for the increase are threefold: First, the demand for an automatically fed and controlled fuel; second, the comparatively recent development of efficient gas-fired boilers suitable for house heating; third, the growing knowledge of the public of the existence and efficiency of such appliances.

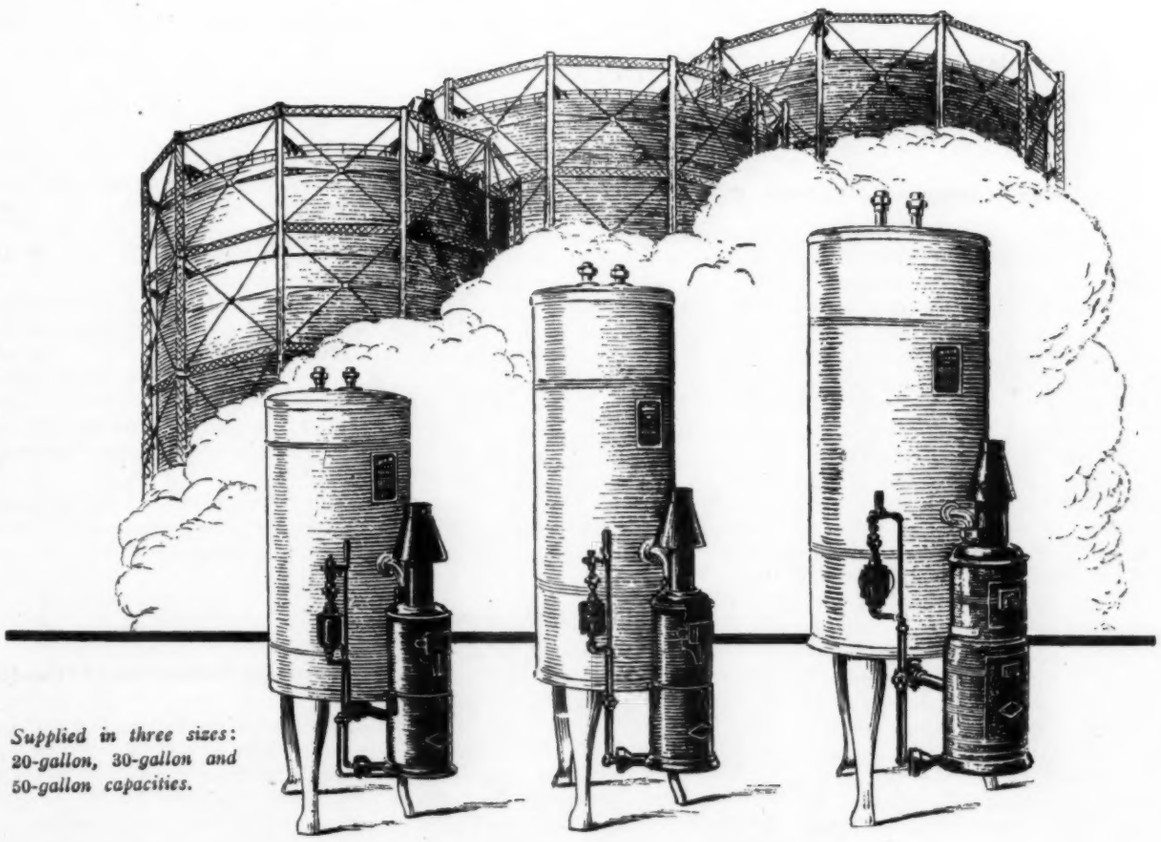
"That the public is ready for the use of gas as a heating fuel is beyond question. Gas is being used for heating where its use has passed beyond the experimental stage and has proven itself to be economically within reach of a large portion of the population.

"The city of St. Louis has hundreds of users of gas boilers and we believe every one of these is fully satisfied with the results obtained therefrom.

"Gallaher gas-fired boilers are in use in all parts of the United States, in the mild clime of California and the Gulf States, as well as the New England States and Canada, where the winters are severe. The satisfactory results obtained with this appliance has promoted the public interest in the localities where used and has been instrumental in increasing the gas consumption in this growing field.

"In the severe storm that swept the country during the past winter countless poles were broken and electrical communication destroyed. The reliability of gas over oil as a fuel received a very practical and forcible demonstration. The oil burners were unable to operate without electric current, and this necessitated either a removal to warmer quarters temporarily or the makeshift of providing heat by turning on the kitchen gas range or some other source of temporary heat.

"This is bound to react in the increased installation of gas-fired boilers for house heating during the coming year—which in turn will bring a wider knowledge of the use of gas for this purpose."



Supplied in three sizes: 20-gallon, 30-gallon and 50-gallon capacities.

Natural Allies—

The Gas Industry and WELSBACH Automatic Storage Gas Water Heaters

FOR nearly forty years, the American Gas Industry has had a faithful lieutenant in the Welsbach Company. These long years of close association have bred a mutual confidence and respect rare in the annals of business enterprise. The Industry has learned to rely on the Welsbach Company, tried and proven on countless occasions.

Recent extension in the use of gas has only served to strengthen and solidify this long-standing alliance, based on common interests and a common goal—the progress of gas. Each new application of gas has found the Welsbach Company ready with appliances of proven efficiency with which to exploit it—appliances that gave gas a chance to do its best. In the steady, onward march of gas to new triumphs the Welsbach Company has always kept step in the front rank.

In line with this traditional spirit of co-operation, the Welsbach Company offers the American Gas Industry its line of Automatic Storage Water Heaters. Low in cost, correctly designed, faultless in workmanship and materials, and dressed up as if for parade in its natty jacket of brilliant grey enamel, it affords the logical means of cultivating a field rich in possibilities for gas—domestic automatic water heating, a stable, all-year-round outlet, the surface of which has hardly been scratched. It is a field, furthermore, in which for cleanliness, convenience and service, gas has no serious competition.

Let the prestige of the Welsbach name open the way for the more extensive use of gas for water heating in your territory.

Manufactured by WELSBACH COMPANY, *Gloucester City, N. J.*
Member American Gas Association

$34,000,000 Merger Planned by Gas Concerns

Long Island Lighting Co. to Take Control of Kings Co. Corp.

The Kings County Lighting Company, with assets exceeding $12,000,000 and gross revenues of more than $2,500,000 a year, is to be merged with the Long Island Lighting Company, under the terms of an offer approved by the directors of both companies, and now awaiting the endorsement of the Public Service Commission. The Long Island Lighting Company is the larger of the two, having assets on February 28 of nearly $22,000,000 and a gross income of $3,693,000 for the 12 months preceding that date.

The deal, one of the largest in New York and suburban gas properties in a long time, involves the acquisition by the Long Island Lighting Company of all or not less than two-thirds of the common capital stock of the Kings County Lighting Company, of which 50,000 shares are outstanding, at $91 a share. In this connection it is proposed to make a collateral trust indenture to secure an issue of Long Island Lighting Company 6 per cent secured gold bonds, amounting to $4,000,000, and to issue now the full amount of the bonds secured thereby, as well as $790,000 par value of the company's 7 per cent cumulative preferred capital stock.

The Kings County Lighting Company supplies gas in the southerly portion of Brooklyn, including the Bay Ridge, Fort Hamilton, Bensonhurst, Borough Park, Bath Beach and adjoining districts, covering a total area of approximately 12½ square miles. Its franchises are perpetual. It owns a water gas manufacturing plant with rated capacity of over 17,000,000 cubic feet a day at Fifty-fifth street and First avenue, Brooklyn, and has four holders with combined capacity of 2,700,000 cubic feet. There are about 60,000 customers and more than 209 miles of mains.

Its capitalization consists of 50,000 shares of no par common, $500,000 Series A 8 per cent cumulative preferred, $1,781,800 Series B 7 per cent cumulative preferred, and 14,600 shares of Series B 7 per cent additional subscriptions. Its working capital position is strong, as shown by current assets on February 28 of $10,017,843, against current liabilities of only $716,104. Income available for dividends and surplus in the 12 months ended February 28 was $584,440. The common pays dividends of $4.50 a year. Funded debt, consisting of three mortgage issues, is $5,000,000. Ralph Elsman is president.

Supplies a Large Area

The Long Island Lighting Company, headed by E. L. Phillips, supplies substantially the entire electric light, power and gas service in the County of Suffolk and the entire electric light and power service in the central and northern parts of Nassau County. The territory represents an area of over 1,100 square miles, having a population of more than 200,000 normally and 300,000 in summer. It owns electric generating stations at Northport, Glenwood, Amityville, Sayville, Islip, Babylon, Bay Shore, Huntington, Port Jefferson, Cutchogue, Riverhead and Southampton; also gas plants at Bay Shore, Babylon and Huntington. It owns 272 miles of high tension transmission lines and a line has recently been constructed to connect the Northport and Glenwood plants so that current can be furnished to the entire territory from either of these plants, both of which are on the water front. There are 36 miles of high pressure gas mains and the main generating station is at Bay Shore.

Gilbert C. Shadwell to Represent Sexton Stove & Mfg. Corp.

An announcement has been made of the appointment of Mr. Gilbert C. Shadwell, sales representative for the S. B. Sexton Stove & Mfg. Corp., Baltimore, Md. Mr. Shadwell's office is at 72 Cortlandt street, New York City.

Mr. Shadwell is well known in the gas industry. He was formerly with the organization of H. L. Doherty & Co., which he joined in 1914. Later he became sales manager of Improved Appliance Company of Brooklyn, N. Y., and remained so until 1922. In 1923, through the amalgamation of the aforementioned company with the Combustion Utilities Corporation, he became connected with the latter concern in the sales department. In 1924, on the acquirement of control of the Surface Combustion Company, he was transferred to the aforementioned organization.

Mr. Shadwell is representing several other concerns, in addition to the one mentioned above.

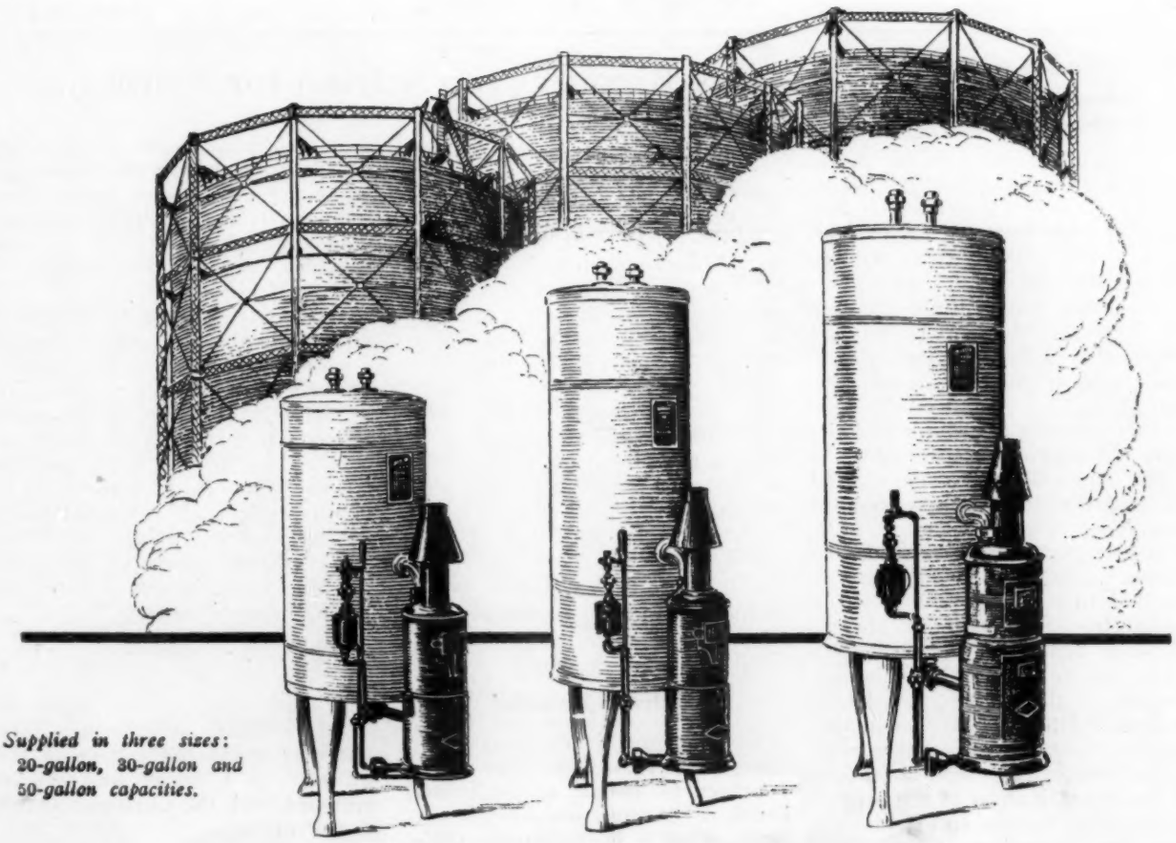
Advertising Convention at Houston

The annual Associated Advertising Clubs of the World convention will take place in May at Houston, Texas. An interesting program has been arranged for the convention and a particularly important part has been arranged for the utility industry. Martin J. Insull and L. W. Baldwin, president of the Missouri Pacific Railway Company, are to deliver addresses at the general session. The Public Utility Advertising Section will have discussions by practical advertising men and utility company executives of the practical aspect of public utility advertising and also an exhibit of public utility advertising as part of the International Advertising Exhibit.

Canadian Gas Association to Meet in Quebec

The 18th annual convention of the Canadian Gas Association will be held in the city of Quebec, Canada, on Wednesday and Thursday, July 15 and 16, 1925.

The meeting will take place in the Chateau Frontenac. A fine program, both from a business and entertainment standpoint, has been arranged.



Supplied in three sizes: **20-gallon, 30-gallon and 50-gallon capacities.**

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Let the prestige of the Welsbach name open the way for the more extensive use of gas for water heating in your territory.

Manufactured by **WELSBACH COMPANY,** *Gloucester City, N. J.*
Member American Gas Association

Associated Gas & Electric Co. Concludes Successful Customer Ownership Campaign

A total of nearly 19,000 shares of preferred stock of the Associated Gas & Electric Co. were sold by this company since January 1, 1925. During the last ten days 12,005 shares were sold. This is particularly remarkable in view of the fact that approximately 45,000 shares had previously been sold, largely in the same territory.

This company inaugurated its plan of customer ownership in 1923. The selling has been carried on entirely through its regular employees. Up to December, 1924, 45,000 shares had been sold. In January, 1925, the management decided to organize a new campaign. From that date until March, 20, over 6,800 shares were sold.

On March 20, ten days before the end of the campaign, a letter was mailed to customers, explaining the termination of the campaign and calling final attention to the attractiveness of the investment. The results from this letter were surprising. Over 12,000 shares were bought by the customers in these ten remaining days. This was especially gratifying in view of the large number of shares previously sold in the same territory.

The management interprets these results to indicate the confidence of the customers in the company. They also indicate the cumulative effect of publicity and selling activities previously carried on.

The number of shareholders of the Associated Gas & Electric Co. has increased from 200 in January, 1922, to approximately 13,000 at the present time, most of whom are also customers of the various Associated companies.

The properties of the Associated Gas & Electric Co. are distributed through nine states: New York, Massachusetts, New Hampshire, Maine, Vermont, Connecticut, Ohio, Kentucky and Tennessee. Their gross revenue has through normal growth and through acquisition of additional properties increased from $1,560,000 in 1921 to over $10,000,000 for the current year.

A Broadcasting Station for Baltimore

Plans for a radio broadcasting station for Baltimore have been announced by President Herbert A. Wagner, of the Consolidated Gas, Electric Light & Power Co. of Baltimore, as follows:

"The Gas & Electric Co. has reached the conclusion that Baltimore should be on the Radio Map, and, as no one else has come forward with an offer to undertake the job, this company has decided to shoulder this responsibility itself, as a civic duty. It can derive no benefit from this enterprise which will not be shared by all living in Baltimore.

"The purpose of such a broadcasting station should be to advertise Baltimore as a place to live and promote business—in other words, to broadcast Baltimore and its many advantages rather than any particular business concern. Radio broadcasting can only be used for advertising in an indirect and inoffensive way.

"Baltimore should have, and is to have, a super power station conducted in a way to do credit to the city, as a city-wide enterprise.

"While the cost of the proposed broadcasting station and its operation will be large, it is the purpose of the Gas & Electric Co. to finance it in such a way as to be negligible in its effect on valuations of the company's property and the establishment of rates for gas and electric service."

Contracts Awarded

The Gas Machinery Company of Cleveland, Ohio, has received a contract to install an additional bench of through sixes to the existing plant in Bellefontaine, Ohio.

The original plant was built by the Gas Machinery Company in Bellefontaine about seven years ago and the new bench will contain silica retorts and settings and be a duplicate of the benches originally installed.

The gas company at Canandaigua, N. Y., has placed an order with the Gas Machinery Company of Cleveland, Ohio, for one new set of equipment consisting of six through silica sectional retorts and settings, recuperators and furnace.

The installation will be complete with new front and rear mouthpieces, standpipes, furnace castings and primary air and steam supply equipment.

The Westerly (R. I.) Light and Power Company are preparing to make extensive improvements to their gas plant and have called upon the U. G. I. Contracting Company of Philadelphia to install new Carburetted Water Gas Apparatus which will give them an additional capacity of approximately 500,000 cu. ft. per day. The new apparatus will be of the latest U. G. I. design and will be equipped with the Chrisman Down Run Process.

In addition to the water gas apparatus, the U. G. I. will install one of its 4-pass high duty condensers, as well as tar extractor equipment of 700,000 cu. ft. daily capacity.

The Connecticut Light and Power Company has placed orders with the U. G. I. Contracting Company of Philadelphia for the installation of Chrisman down run process on two of its water gas sets at Norwalk.

The Illinois Power and Light Corporation has recently placed a contract with the Western Gas Construction Company of Fort Wayne, Indiana, for two 20 ft. diameter by 12 ft. deep steel purifiers and connections, for erection at Centralia, Illinois.

The Huntsville Gas Company of Huntsville, Ala., has awarded the contract to the Western Gas Construction Company of Fort Wayne, Indiana, for a 4 ft. 6 in. by 4 ft. by 4 ft. water gas set.

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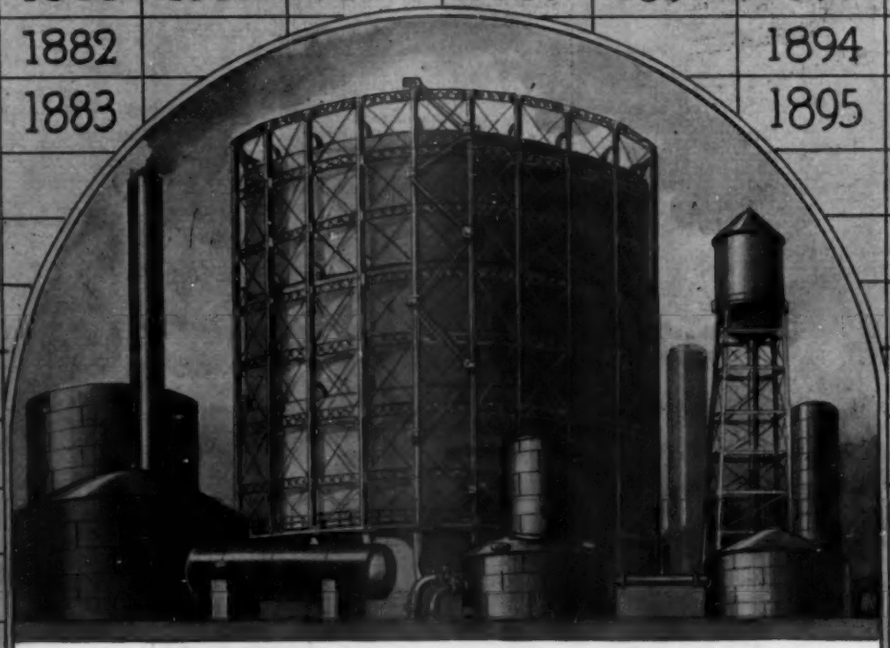


GAS HOLDERS AND TANKS

If you want to inspect a GAS HOLDER made by us before placing your next order, you won't have far to travel. With "OVER A THOUSAND GAS HOLDERS" to our credit, there is certain to be one at a Gas Plant nearby—regardless of where you are located. Ask us to send a list of nearby STACEY MANUFACTURING COMPANY Holders. Then inspect them. When you have noted their sturdy construction and design, also think of the extensive experience and manufacturing facilities we can put at your service!

THE STACEY MANUFACTURING Co

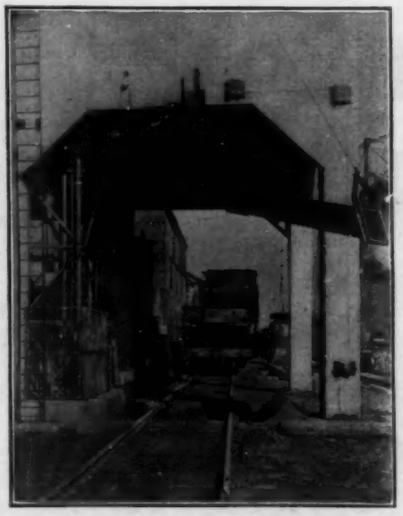
CINCINNATI—OHIO

J. FRANK STACEY, Pres. and Gen. Mgr. THOS. C. RANSHAW, Vice-Pres.
EDW. J. BAECHLE, Sec'y and Treas.
W. D. BIRBECK, Sales Engr. FRANK O. PANDORF, Chief Engr.

ROPER'S NEW GAS STOVE ON MARKET DEC. 1
Latest Product of Big Local Plant
ALL OVER AMERICA DEC. 1ST THIS NEW ROPER WILL BE UNVEILED [NATIONALLY]
A New and Greater Gas Range Will be Unveiled Nationally on December 1st
. . . on December 1st
All previous standards of Gas Range Beauty, Convenience, and Operating Economy have been surpassed in . . . The New Roper with Complete Oven Control.
The Veiled Roper is in our window. We shall unveil and demonstrate it at 10 a. m. on December 1.
Don't miss seeing the gas range that will make history.
The Gas Appliance Exchange, Inc.
789-803 Main Street, Bridgeport
TWO THOUSAND GAS STOVES ARE SOLD ON FAITH
A TRY IN LAUGHING
A NEW PRODUCT
Successful ~ Everywhere
Every way ~ National Unveiling of New ROPER
JAMES BEVERIDGE CO.
1359 Fulton St., Phone 1066
"If It's a Gas Appliance—We Have It"
Thompson-Bauer-Austin
Indiana Fuel & Light Co.
Illinois Power and Light Corporation
Fort Madison Gas Light Co.
REMEMBER THE TIME AND DATE
Monday Morning, 10 a. m., December 1st
SEE OUR WINDOW
Peoples Light Company
ROPER FIRM UNVEILS NEW GAS RANGE
The Unveiling of the new member of the Roper family made a hit with dealers. They put the Veiled Roper in their windows—and ran Unveiling advertisements. This focused the attention of the public on the event.
The Result—the New Roper received more favorable attention than any new gas range ever created. And all the people who have seen it hope some day to own a New Roper. The dealers sold out at once, of course, but they sold other Roper Ranges too, and they know that all through 1925 they will sell more Ropers because of the wide desire created through the Roper Unveiling.
GEO. D. ROPER CORPORATION
ROCKFORD, ILLINOIS
Pacific Coast Branch: 768 Mission St., San Francisco, California
ROPER RANGES
If your town did not take part in the National Unveiling—we have a Local Unveiling Plan for you. Write for prot-making particulars.
Chattanooga Gas Co.
Public-Be-Pleased Service.
Peoples Gas & Electric Co.
CITIZENS GAS & ELECTRIC COMPANY
Ottumwa Gas Co.
Clinton Gas & Electric Company
Cash or Term Payments
Rockford Gas Light & Coke Co.
Des Moines Gas Company
Telephone Walnut 322
7th and High St.
Sioux City Gas & Electric Co.

BE SURE THE ROPER PURPLE LINE AND THE ROPER COMPLETE OVEN CONTROL ARE ON THE RANGE YOU SELL

One Saturday Night
—*and its Lesson to the Gasmen*



Close-up view showing Hunt Low-Type, Duplex Self-Locking Cut-Off Gate and Hunt Swiveling Chute—adaptable to any position for loading railroad cars or wagons Installed in the Gas Plant of the Philadelphia Suburban Co., Chester, Pa.

"One Saturday night, while the store was crowded, the electric lights of a fur establishment suddenly went out. When a new fuse was put into the circuit, and the lights relighted, it was found that some $1,400.00 worth of merchandise was missing."

This incident is given in an article by J. E. Bullard, to illustrate the value of gas as emergency illumination, under the title, "An Undeveloped Lighting Opportunity," which appeared in this Journal, December 20th, last.

Continuing, Mr. Bullard said:

"The owner of that store immediately became an excellent prospect for emergency gas lighting. He was, in fact, ready to buy a first-class gas lighting installation, if approached by a gas lighting salesman while the loss was fresh in his mind."

There is much valuable material in the article to convince the gas executive that there is a remunerative field for emergency gas lighting, and contrary to the pessmistically inclined, GAS AS AN ILLUMINANT IS NOT QUITE OVER. It has proved itself as the most DEPENDABLE of all lighting mediums.

Just as gas has proved itself as the most dependable in its specific field, so has HUNT COST-CUTTING EQUIPMENT proved its dependability in every case where coal, coke and ashes had to be handled economically, efficiently and rapidly.

For over 40 years of the past half century, Hunt Apparatus has had the approval of gas executives everywhere. Numerous installations have been in existence for from 18 to 30 years—with only minor repairs—and are still giving excellent service.

HUNT ENGINEERS, from their long experience in handling problems, will gladly render every assistance in planning a suitable system that will prove satisfactory for your requirements.

WE DESIGN AND BUILD:
Industrial Railways, Automatic Railways, Cable Railways, Cars, Tracks, Switches, Motor Cars, Scales, Conveyors, Skip Hoists, Electric Vibrating Screens, Cut-off Valves, or Gates, Weighing and Measuring Devices, Coal Crackers, "Stevedore" Transmission Rope and Hoisting Rope.

C. W. HUNT COMPANY CO.
West New Brighton, New York City

New York Office—Whitehall Building

PHILLIPS LANG & CO., INC.,
431 S. Dearborn St., Chicago, Ill.

ERNEST F. LEARNED
141 Milk St., Boston 9, Mass.

ENGINEERING EQUIPMENT CO., LTD., 358 Beaver Hall Square, Montreal

SAFETY GAS MAIN TAPE

Insulates and Mends

Keep it on hand for repairing breaks in Mains and Services. A perfect Electrical Insulator. Absolutely protects gas pipes against electrolytic corrosion. Bonding Tape, all weights, any width, coated and uncoated. Insulate your pipes with Bonding Tape against electricity and prolong their life.

SAFETY GAS MAIN STOPPER CO.

523 ATLANTIC AVENUE

BROOKLYN, N. Y.

U. G. I. WATER GAS APPARATUS

Carburetted Water Gas Apparatus

IN the art of Carburetted Water Gas manufacture, we have always occupied the pre-eminent position. As holders of the original patents and pioneer builders when the process was in its infancy, we developed the apparatus, as well as its appurtenances, from the first crude machines of forty years ago to the modern apparatus demanded by today's intensive practice.

U. G. I. Water Gas Apparatus represents the last word in scientific design and fabrication, based upon intelligent research and experimentation in our own physical laboratory. The apparatus is designed and built, not with the idea of producing something which can be sold at a low figure, but rather to produce an apparatus which will represent every dollar expended upon it and which will maintain the operating and repair costs at the lowest possible minimum.

THE U. G. I. Automatic Control can be placed on any hydraulically operated water gas apparatus, but it could not be applied to apparatus not having the hydraulic operating feature.

By the use of the U. G. I. Automatic Control appreciable savings are effected and the water gas apparatus is operated with greatly increased efficiency. By its use, the generator fuel is saved and the fuel bed maintained in better condition, producing a uniform quality of gases and a softer clinker, which can be easily and quickly removed. Likewise, the automatic control permits of shorter cycles, which in turn results in more uniform temperatures in the carburetor and a more complete and effective gasification of the oil.

Automatic Control of Water Gas Apparatus

THE U. G. I. CONTRACTING COMPANY

Broad and Arch Streets -- Philadelphia, Penna.

421 Peoples Gas Bldg., Chicago **928 Union Trust Bldg., Chicago**

4 GOOD REASONS

Why we are qualified to erect Your Gas Holder

1. Our Organization

Composed of men who, through many years of practical experience have become experts and who realize that your interests are as important as theirs.

2. Our Equipment

Modern up-to-the-minute equipment assuring you of speed and accuracy in fabricating and efficiency in erecting your gas holder.

3. Design

Whatever your holder requirements may be, our engineering personnel guarantees fulfillment.

4. Location

Our plant is admirably situated in the hub of the steel industry, assuring you an adequate supply of raw materials at all times.

Pennsylvania Engineering Works

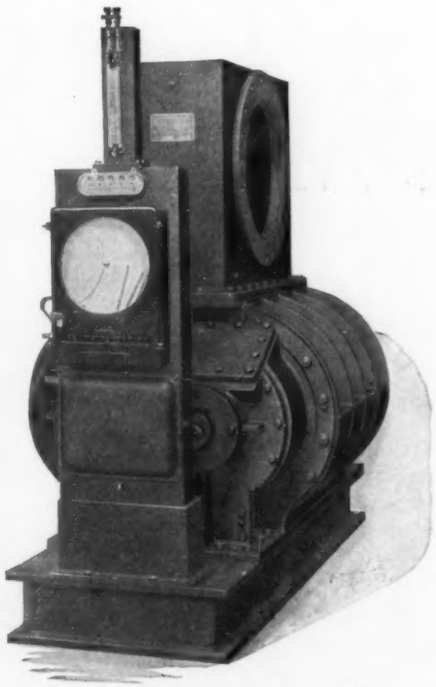
Gas Construction Division

Main Office and Works New Castle, Pa.

New York Office 60 Wall St.

KEYSTONE OF SERVICE

A Complete Record on One Chart



Connersville Rotary Displacement Meter with P.V.T.T. Recording Gauge.

Fundamentally the only instruments required to obtain accurate results from the Connersville Rotary Displacement Meter (Patented) are a revolution counter, and a U-gauge to show the pressure and differential across the meter. These are supplied with all Connersville Meters.

Some installations may require a record of inlet pressure of the gas, also of temperature, rate of flow and means of determining the variation in slip. If each one of these instruments is driven by a clock, as is common practice, the average must be calculated for each hour of the day separately in order to obtain a closer reading.

The Connersville Pressure-Volume-Temperature-Time Recording Gauge gives a complete record in one chart of the volume of gas passed including slip, the inlet pressure of gas above atmosphere, the temperature and rate of flow. It is driven forward by the meter, so that with an averaging instrument, a true average can be obtained without calculating each hour separately.

This P. V. T. T. Recording Gauge, designed by Connersville engineers for Connersville Meters and built for us by a reliable gauge manufacturer, may be obtained where conditions make its use advisable.

The Connersville Blower Co.

12th Street and Columbia Ave.

Connersville, Ind.

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Connersville

Wherever You Put In a Meter

Every time you put in a new meter, there is a chance to get extra profits through the sale of the right kind of radiant heater.

Start your sales argument by calling attention to the fireplace—generally empty. Point out the expense of burning wood—or the lack of beauty and comfort if the fireplace is allowed to remain cheerless and empty.

The possible profits that can come to you from Kennedy Sheetflame Radiant Heaters are limited only by your appreciation of its possibilities, and the intelligent sales effort you place behind it. Don't look on it as a small volume specialty; it is really a large volume staple. Simply do a little careful planning, and make up your mind to fill those empty fireplaces, which you will find scattered all over your territory.

The more you compare the Kennedy Sheetflame construction with ordinary radiant heaters, the more you will appreciate the greater satisfaction it gives the user.

Each one of its "Seven Points" is a sales argument strong enough to clinch a sale and give it preference over all other types. The Kennedy Sheetflame Radiant Heater has every point of advantage on which to build a sound and profitable sales campaign. Write for complete details today.

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126 ELEVENTH AVENUE NEW YORK CITY
The J. G. White Management Corporation, Operating Managers

KENNEDY *Sheetflame*
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R. W. Hoey Sales Co., Inc.
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Better Gas men *can* be made by learning more of their industry through the pages of the

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the gas man's own paper for the past Sixty-Six years.

See our program for 1925 published as an insert in last week's issue.

Note the continuance of the various features which have appeared during the last year, that gas men everywhere have appreciated and endorsed, and the two new departments inaugurated for 1925:

1. A Service for the Technical Man.

2. A Service for the Commercial Man.

Don't let this valuable source of gas knowledge end with your present subscription. *Renew at once,* so that you can keep up-to-the-minute on all subjects pertaining to your own industry through *your own* weekly paper.

.....192..

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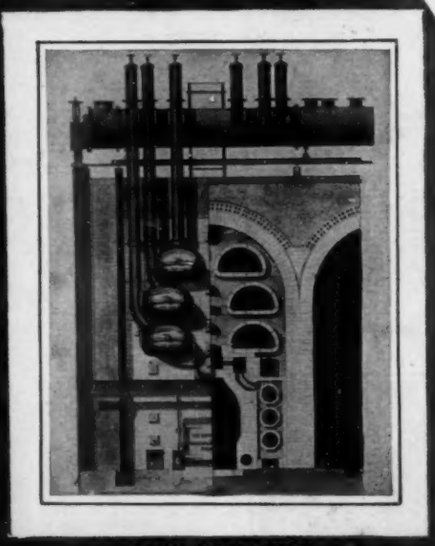

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Our regular line of High Pressure Regulators may be used on any inlet pressure up to 600 pounds. For higher pressures we make a special class of regulators, for which special prices will be quoted on application.

High Pressure Regulators are made in all sizes up to 24 inches.

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CHAPLIN-FULTON
MANUFACTURING
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Pittsburgh . . Pa.

That Is How the Fight Began

"We don't all think alike," said the man. "If everybody thought as I do everybody would have wanted my wife."

"Yes," replied the other fellow, "and if everybody thought as I do nobody would have her."

And this is the way of it with engines, automobiles and all sorts of things, including elevators.

THE ONLY PEOPLE WHO DO NOT GET RIDGWAY ELEVATORS IF THEY HAVE STEAM ARE THE "DEAD ONES."

So we are printing these half page cards every week in order that you may know this **WONDER ELEVATOR.**

In order to indicate the machine is worth looking into, we print below a sample of the 3,000 users.

We give **ABSOLUTE PERFECTION IN ELEVATOR SERVICE** and **NOBODY PAYS ONE CENT UNTIL WE MAKE GOOD.**

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The Ridgway Elevator is the one machine in a plant that always goes so long as the boiler holds together

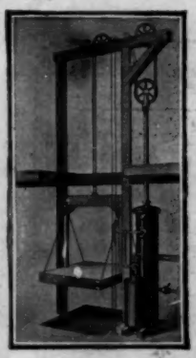
No matter how neglected or abused, it never fails to function and function **PERFECTLY.**

These are some of the reasons why **THE BIG FELLERS** like those up there

"HOOK 'ER TO THE BILER"

Craig Ridgway & Son Co.

Over 3000 in daily use **COATESVILLE PA.**



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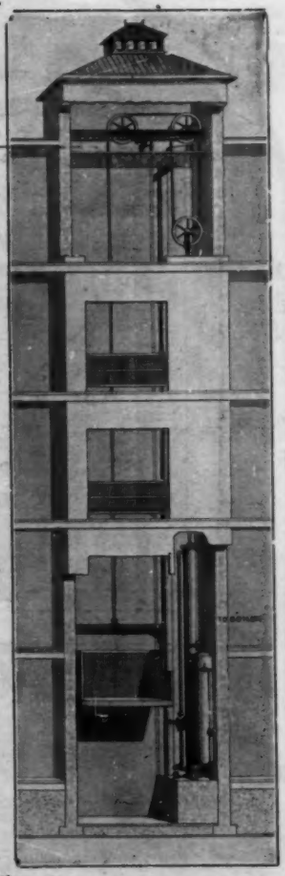

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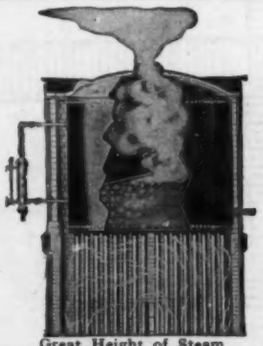
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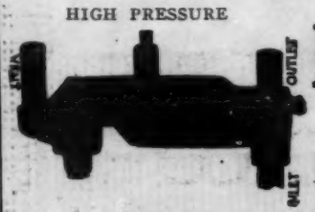

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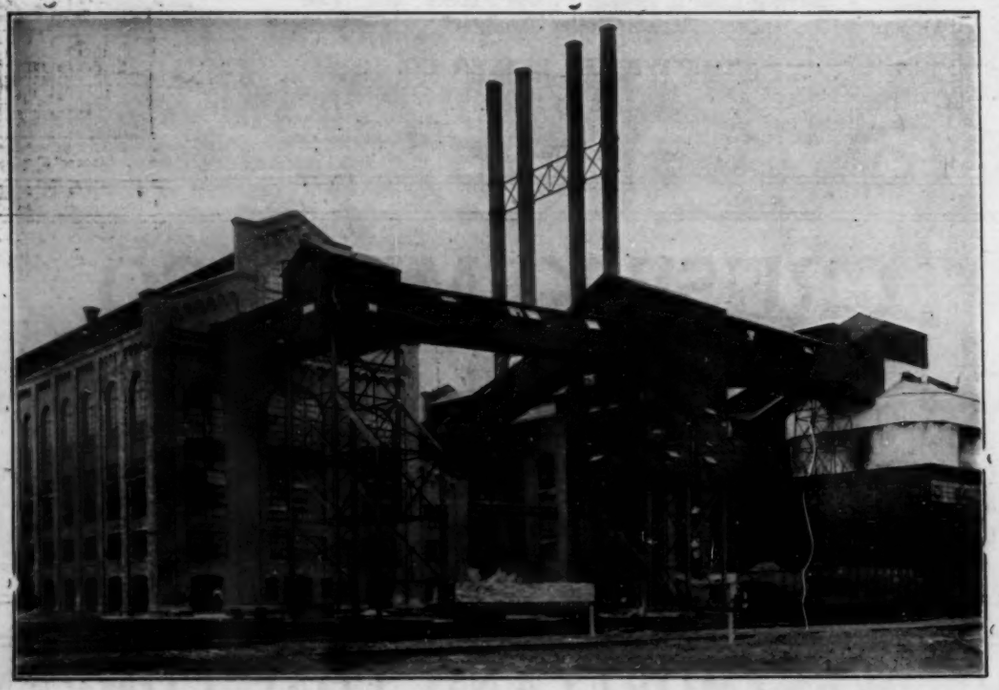

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Fuel unloading and handling apparatus for Boiler House and Water Gas Plants, having capacity of seventy million cubic feet per day.

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The Welsbach Line Makes Friends for Gas Heat

What do your customers look for in a gas heater when they come in to buy?

They are probably sold on gas heat already; they know it is quick, clean and always on the job. But what of the actual heater itself? Is the heat it gives the only consideration? Has economy of operation any influence? Or, does appearance figure most?

No matter what the individual needs and preferences of your customers, they can be met most satisfactorily with the Welsbach line.

The points that help you sell Welsbach Radiant Heaters *keep* them sold, and, what is equally important, keep gas heat sold. The superior design and workmanship result in sturdier wearing qualities and greater and more lasting heating efficiency. The pains taken with the construction, materials and positioning of all component parts of a Welsbach Radiant Heater assure absolutely dependable, complaint-free service. Every user of a Welsbach Radiant Heater becomes a booster for gas heating.

When the testing laboratories of gas companies report to their commercial departments that Welsbach Radiant Heaters, for all-around excellence, are superior to any other on the market, it's an endorsement to be proud of. And they're doing it every day!

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A new fireplace model, with header extending entirely to the top—an added advantage in practical utility and appearance.

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Both No. 37 and No. 39 (identical with No. 37 save for two additional glowers) come with or without andirons, wings and extension top.

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Has exposed copper reflector.

Welsbach Gas Heaters

Their unique method of producing and instantly distributing radiant heat gives to Welsbach Heaters many demonstrable advantages that readily make sales. Perfect service is assured by various exclusive features, each meaning much in added warmth, speed and convenience.

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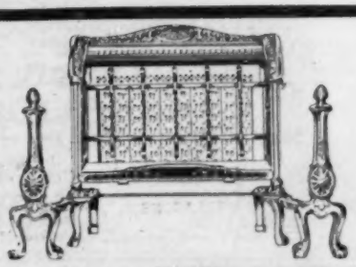

No. 27
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Massed glower effect.

NU-STYL
GAS IRONS

The best device on the market for its purpose. Construction is mechanically and scientifically correct. Air supply automatically controlled.

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No burner troubles—non-backfire—odorless. Exclusive features are shock-absorbing spring handles, also our 2 lb. slip-on weight increaser (our 2 in 1 feature.)

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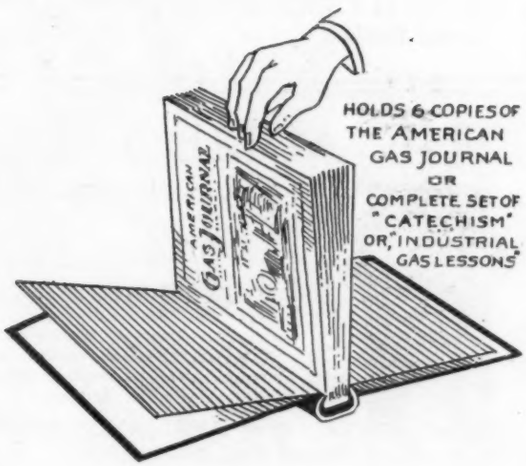

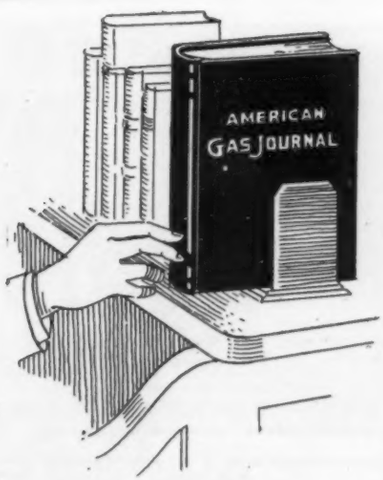

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Recently we have been able to secure a spring-back binder, heavy covers, bound in leatherette, size 9½"x 12½". There are no screw plugs to take out or punching of holes in sheets — just spring back the covers and insert new sheets and they are securely held in place.

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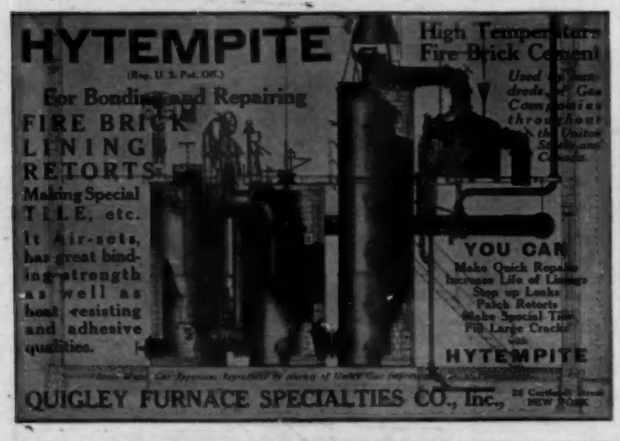

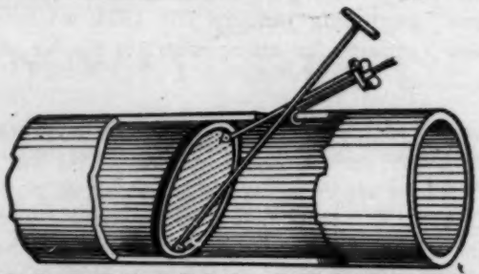

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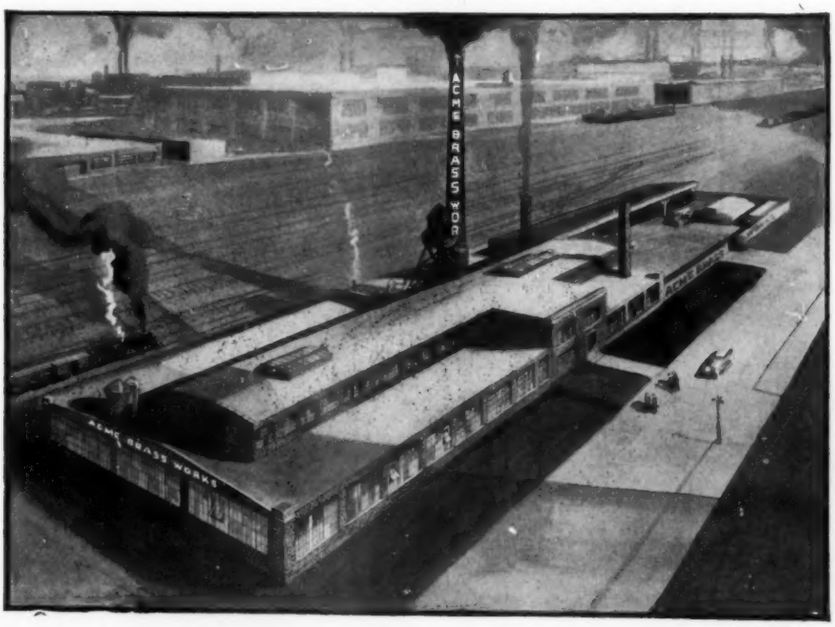

ACME GAS COCKS

For obvious reasons Detroit may well be known as the "home of volume production." Many industrial concerns in this city have learned this truly American art. We are one of those who have profited by association and produce abundantly.

Because of the vast amount of traffic to and from the city, the railroads have been generous in their service to manufacturers. This is a distinct advantage by which the buyers of Acme products profit. As our plant is situated on the main line our raw materials are handled quicker and at less expense, likewise our shipping conveniences enable rapid service to any part of the United States.

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No. 208

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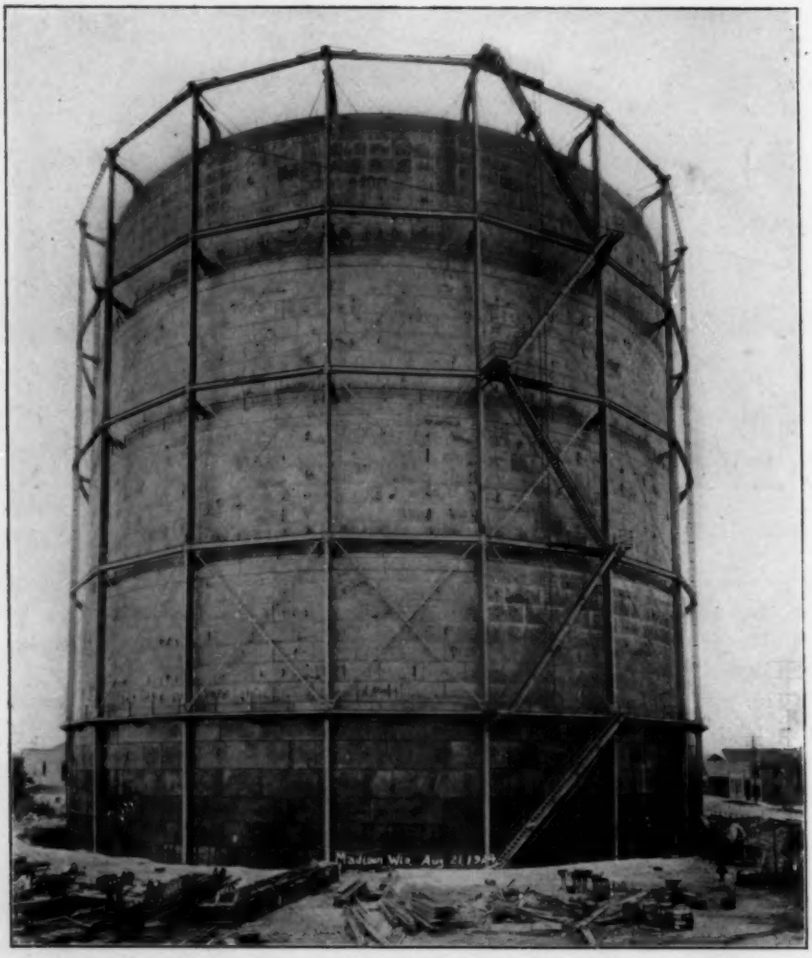
Another Concrete Example of our

"ABILITY TO SERVE"



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BRADFORD, PENNA., U. S. A.

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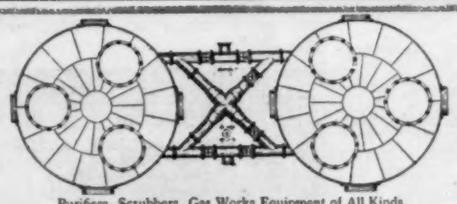

Purifiers, Scrubbers, Gas Works Equipment of All Kinds
Welded and Riveted Plate Metal Work

GAS ENGINEERING CO.
TRENTON, NEW JERSEY

Russell Engineering Company *St. Louis*
Coal Carbonization Plants, Benches, Repairs, Improvements, Extensions, Apparatus

Buyers Reference Index

See page 31 for advertisements of these products

AMMONIA CONCENTRATORS
Michigan Ammonia Works

AMMONIA STILLS
Unger, John S.

ANNEALING MACHINES
Rotary
American Gas Furnace Co.

BAFFLES
Quigley Furnace Specialties Co.

BAGS
Gas
Edward A. Behringer Co.
Safety Gas Main Stopper Co.
See also Stoppers.

BENCHES
Complete
Bartlett-Hayward Co.
Gas Machinery Co.
Gardner, James, Jr., Co.
Improved Equipment Co.
Isbell-Porter Co.
Jersey City Refractories Co.
Missouri Firebrick Co.
Parker-Russell Mining & Manufacturing Co.
Russell Engineering Co.
Stacey Brothers Gas Constr. Co.
Steere Engineering Co.
West Gas Improvement Co.

BENZOL
Bartlett-Hayward Co.
Gas Machinery Co.

BLOWERS
Pressure
American Gas Furnace Co.
Connersville Blower Co., The
Roots, P. H. & F. M.

BOILER GRAPHITE
Dixon Crucible Co., Joseph

BOILERS
New York Engineering Co.

BOOSTERS
American Gas Furnace Co.
Connersville Blower Co., The

BURNERS (Industrial)
Surface Combustion Co.
Fuel
American Gas Furnace Co.
Connelly Iron Sponge & Gov. Co.
Franklin Gas Burner Mfg. Co.

BY-PRODUCT PLANTS
Bartlett-Hayward Co.
Gas Machinery Co.
Riter-Conley Co.
Steere Engineering Co.

CALORIMETERS
American Meter Co., Inc.

CEMENTS
Jos. Dixon Crucible Co.
Gardner, James, Jr., Co.
Gerould, C. L.
Improved Equipment Co.
Jersey City Refractories Co.
Parker-Russell Min. & Mfg. Co.
Quigley Furnace Specialties Co.

CHARGING MACHINERY
Bartlett-Hayward Co.
Gas Machinery Co.
Hunt, C. W. Co.
Improved Equipment Co.
Isbell-Porter Co.
Parker-Russell Min. & Mfg. Co.
Stacey Manufacturing Co., The
Stacey Bros. Gas Construction Co.

COCKS
Acme Brass Works
Claus Automatic Gas Cock Co.

COALS
Westmoreland Coal Co.

COAL GAS APPARATUS
Bartlett-Hayward Co.
Gas Machinery Co.
Improved Equipment Co.
Isbell-Porter Co.
New York Engineering Co.
Parker-Russell Min. & Mfg. Co.
Russell Engineering Co.
Stacey Bros. Gas Constr. Co.
Stacey Manufacturing Co., The
U. G. I. Contracting Co.
West Gas Improvement Co.

COAL AND COKE HANDLING MACHINERY
Bartlett-Hayward Co.
Isbell-Porter Co.
Hunt Co., C. W.
Parker-Russell Min. & Mfg. Co.
Russell Engineering Co.

COKE CRUSHERS
Bartlett-Hayward Co.
Keller, C. M.

COMPUTERS
United Gas Improvement Co.
Low Pressure
Cox—American Gas Journal
Fox—American Gas Journal
High Pressure
Cox—American Gas Journal

CONDENSERS
See Purifiers

CONVEYORS
Bartlett-Hayward Co.
Gas Machinery Co.
Hunt, C. W., Co.
Isbell-Porter Co.
Stacey Bros. Gas Constr. Co.
Stacey Manufacturing Co., The

CONCENTRATORS—AMMONIA
Michigan Ammonia Works

DERRICKS—PIPE
Safety Gas Main Stopper Co.

DIES
Nye Tool & Machine Works

DISCHARGING MACHINERY
Bartlett-Hayward Co.
Hunt, C. W. Mfg. Co.
Improved Equipment Co.
Isbell-Porter Co.

DRIP PUMP BOX
Keller, C. M.

ELEVATORS
Ridgway, Craig, & Sons

ENGINEERS
Combustion
Improved Equipment Co.
Parker-Russell Min. & Mfg. Co.
Surface Combustion Co.
Consulting
Allison, Walter A.
Byllesby & Co., H. M.
Freese, Fred W.
Improved Equipment Co.
Ludlum Engineering Co.
Randolph, W. W.
Waring, George H.
Contracting
Barrett, William E.
Bartlett-Hayward Co.
Byllesby & Co., H. M.
Cruse-Kemper Co.
Gas Machinery Co.
Improved Equipment Co.
Isbell-Porter Co.
New York Engineering Co.
Parker-Russell Min. & Mfg. Co.
Russell Engineering Co.
Stacey Bros., Gas Constr. Co.
Stacey Manufacturing Co., The
Steere Engineering Co.
U. G. I. Contracting Co.

EXHAUSTERS
Connersville Blower Co., The
Gas Machinery Co.
Isbell-Porter Co.
P. H. & F. M. Roots Co.

FIREBRICK—CHECKER BRICK
Gas Machinery Co.
Gardner, James, Jr., Co.
Improved Equipment Co.
Jersey City Refractories Co.
The Jersey City Refractories Co.
Missouri Firebrick Co.
Parker-Russell Min. & Mfg. Co.
Russell Engineering Co.

FITTINGS
Claus Automatic Gas Cock Co.
Donaldson Iron Co.
New York Engineering Co.
Steere Engineering Co.
U. G. I. Contracting Co.

FIXTURES
General Gas Light Co.
Gleason, E. P., Mfg. Co.
Welsbach St. Lt. Co. of Amer.
Welsbach Co.

FURNACES (Case Hardening)
American Gas Furnace Co.
Improved Equipment Co.
Surface Combustion Co.

FURNACE BURNERS
Franklin Gas Burner Mfg. Co.

GAS ANALYSIS APPARATUS
U. G. I. Contracting Co.

GAS MASKS
Edward A. Behringer Co.
Safety Gas Main Stopper Co.

GAS PLANTS, COMPLETE
Bartlett-Hayward Co.
Gas Machinery Co.
Improved Equipment Co.
Isbell-Porter Co.
Parker-Russell Min. & Mfg. Co.
Riter-Conley Co.
Russell Engineering Co.
Stacey Manufacturing Co., The
Stacey Bros. Gas Constr. Co.
U. G. I. Contracting Co.
West Gas Improvement Co.

GAS-TESTING APPARATUS
American Meter Co., Inc.
Equitable Meter Co.
Lambert Meter Co.
Superior Meter Co.
Sorague Meter Co.

GAUGES
Pressure-Recording
American Meter Co., Inc.
Connelly Iron Sponge & Governor Co.
Helme & McIlhenny
Lambert Meter Co.
McDonald & Co., D.
Pittsburgh Meter Co.
Precision Thermometer & Instrument Co.
Superior Meter Co.
Sprague Meter Co.
U. G. I. Contracting Co.

GLASSWARE
Globes, Shades and Bowls
Gleason, E. P., Mfg. Co.
Welsbach Co.

GLOBES, GAS
Gleason, E. P., Mfg. Co.
Welsbach Co.

GOVERNORS
American Meter Co., Inc.
Chaplin-Fulton Mfg. Co.
Connelly Iron Sponge & Gov. Co.
Equitable Meter Co.
Reynolds Gas Regulator Co.

Automatic
Connelly Iron Sponge & Gov. Co.
Equitable Meter Co.
Steere Engineering Co.

Coke Oven
Connelly Iron Sponge & Gov. Co.
Equitable Meter Co.
Gas Machinery Co.
Steere Engineering Co.

District
Connelly Iron Sponge & Gov. Co.
Helme & McIlhenny
Isbell-Porter Co.
Steere Engineering Co.

Exhauster
Connelly Iron Sponge & Gov. Co.
Isbell-Porter Co.

High Pressure
Connelly Iron Sponge & Gov. Co.
Chaplin-Fulton Mfg. Co.
Reynolds Gas Regulator Co.
Sprague Meter Co.

Low Pressure
Connelly Iron Sponge & Gov. Co.
Chaplin-Fulton Mfg. Co.
Reynolds Gas Regulator Co.

Retort House
Connelly Iron Sponge & Gov. Co.
Gas Machinery Co
Isbell-Porter Co.
Steere Engineering Co

Service
Connelly Iron Sponge & Gov. Co.
Chaplin-Fulton Mfg. Co.
Equitable Meter Co.
Gas Machinery Co.
Sprague Meter Co.

Station
Connelly Iron Sponge & Gov. Co.
Equitable Meter Co.
Gas Machinery Co.
Helme & McIlhenny
Reynolds Gas Regulator Co.

Station Automatic
Connelly Iron Sponge & Gov. Co.
Gas Machinery Co.

HEATERS (WATER)
Pittsburg Water Heater Co.

HEATERS—ROOM
General Gas Light Co.
Radiant Heat Corpn. of Amer
Standard Gas Equipment Corp'n (Vulcan Div.).
Welsbach Company

HEATING MACHINES
American Gas Furnace Co.

HOLDERS
Bartlett-Hayward Co.
Cruse-Kemper Co.
Riter-Conley Co.
Stacey Bros. Gas Constr. Co.
Stacey Manufacturing Co., The

HOUSE HEATING BURNERS
Franklin Gas Burner Mfg. Co.

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N. Y. Engineering Co.

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Improved Equipment Co.

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Make a Superior Concentrate without Salting
Lime Supply with Minimum Amount
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A better pipe, attractively priced
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Emaus Pipe Foundry

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EMAUS, PA.

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NEWARK, N. J.

Company Member American Gas Association

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Ratchet Pipe Cutter

Automatically cuts cast iron, steel and wrought iron pipe (from 1½" to 30" diam.) by hand, from any position easily.

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Our More Than 40 Years' Experience Is at Your Service

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Elizabeth, N. J.

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RITER-CONLEY COMPANY
General Offices, Pittsburgh, Pa.

STEERE ENGINEERING CO.
DETROIT, MICHIGAN.

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Hygrometers
Manometers
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Draft Gauges
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The oxide that removes the last trace of H_2S.
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The oxide of quick revivification.
The oxide requiring few changes.
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The oxide that reduces the cost of purification.
Available as imported or in the form of Sponge ready for use.

WE SOLICIT YOUR INQUIRIES

E. J. LAVINO and COMPANY
Bullitt Bldg. **Philadelphia, Pa.**

Buyers' Reference Index

See page 31 for advertisements of these products

INDUSTRIAL FUEL APPLIANCES
American Gas Furnace Co.
Surface Combustion Co.

INDUSTRIAL GAS MIXERS
C. M. Kemp Mfg. Co.

INSTRUMENTS
Recording
American Meter Co.
Pittsburgh Meter Co.
Precision Ther. & Inst. Co.

IRONS—GAS
Benson Mfg. Co.
General Specialty Co.

INSULATION (Heat)
Quigley Furnace Specialties Co.

IRON SPONGE
Connelly Iron Sponge & Gov. Co.

JOINTS—PACKING
Connelly Iron Sponge & Gov. Co.

LAMPS
General Gas Light Co.
Gleason, E. P., Mfg. Co.
Welsbach Co.
Welsbach Street Lighting Co.

LAMP POSTS
General Gas Light Co.
U. S. Cast Iron Pipe & Fdry. Co.
Welsbach Street Lighting Co.

MANTLES
General Gas Light Co.
Gleason, E. P., Mfg. Co.
Welsbach Co.
Welsbach St. Ltg. Co. of Amer.

MASKS—GAS
Edward A. Behringer Co.
Safety Gas Main Stopper Co.

METERS
Air
Connersville Blower Co.
Equitable Meter Co.
Gas Machinery Co.
Lambert Meter Co.
Pittsburgh Meter Co.
P. H. & F. M. Roots Co.
Superior Meter Co.
Artificial Gas
Connersville Blower Co.
Griffin & Co., John J.
Helme & McIlhenny
Lambert Meter Co.
Maryland Meter Works
Pittsburgh Meter Co.
P. H. & F. M. Roots Co.
Sprague Meter Co.
Superior Meter Co.
Dry
Cleveland Gas Meter Co.
Natural Gas
Cleveland Gas Meter Co.
Connersville Blower Co.
Equitable Meter Co.
Helme & McIlhenny
Lambert Meter Co.
Maryland Meter Works
Metric Metal Works
P. H. & F. M. Roots Co.
Pittsburgh Meter Co.
Sprague Meter Co.
Superior Meter Co.
Prepayment
American Meter Co., Inc.
Cleveland Gas Meter Co.
Griffin & Co., John J.
Helme & McIlhenny
Maryland Meter Works
McDonald & Co., D.
Sprague Meter Co.
Tufts, Nathaniel, Meter Co.
Station
American Meter Co., Inc.
Connersville Blower Co.
Griffin & Co., John J.
Helme & McIlhenny
Maryland Meters Works
McDonald & Co.
P. H. & F. M. Roots Co.
Test
American Meter Co., Inc.
Lambert Meter Co.
Maryland Meter Works
Pittsburgh Meter Co.
Sprague Meter Co.
Superior Meter Co.

METER CONNECTIONS
Cleveland Gas Meter Co.
Lattimer-Stevens Co.
Pittsburgh Meter Co.

MIXERS—GAS
C. M. Kemp Mfg. Co.

OVENS—COKE AND GAS
Gas Machinery Co.
Improved Equipment Co.
Parker-Russell Min. & Mfg. Co.
Russell Engineering Co.
Stacey Bros. Gas Constr. Co.

OXIDE
Iron
Alpha Lux Co.
Am. Min. Prod. & Col. Co., Ltd.
Connelly Iron Sponge & Gov. Co.
Gas Purifying Materials Co.
Iron Hydroxide Co.
Lavino, E. J., & Co.

PAINTS
Dixon Crucible Co., Jos.

PHOTOMETERS
American Meter Co., Inc

PIPE—CAST IRON
American Cast Iron Pipe Co.
Cast Iron Pipe Publicity Bureau.
Donaldson Iron Co.
Glamorgan Pipe & Foundry Co.
James B. Clow & Sons.
Lynchburg Foundry Co.
McWane Cast Iron Pipe Co.
National Cast Iron Pipe Co.
U. S. Cast Iron Pipe & Fdry. Co.

PIPE CUTTERS
Strickler, W. W. & Bros.

PLATES
Floor
U. S. Cast Iron Pipe & Fdry. Co.
Metal
Bartlett-Hayward Co.
Cruse-Kemper Co.
Stacey Bros. Gas Construction Co.
Stacey Mfg. Co.

PLUGS—SERVICE AND MAIN
Soft Wood
Edward A. Behringer Co.
Safety Gas Main Stopper Co.

PRODUCER GAS PLANTS
Bartlett-Hayward Co.
Gas Machinery Co.
Steere Engineering Co.

PROVERS—METER
American Meter Co., Inc.
Equitable Meter Co.
Helme & McIlhenny
Lambert Meter Co.
Maryland Meter Works
McDonald & Co., D.
Pittsburgh Meter Co.
Sprague Meter Co.
Superior Meter Co.

PUMPS
Drip—Tar—Oil
American Meter Co., Inc.
Connersville Blower Co., The

PUMPS—TRENCH

PURIFIERS
Bartlett-Hayward Co.
Gas Machinery Co.
Isbell-Porter Co.
New York Engineering Co.
Parker-Russell Min. & Mfg. Co.
Riter-Conley Co.
Stacey Bros. Gas Constr. Co.
Stacey Manufacturing Co., The
Steere Engineering Co.
U. G. I. Contracting Co.

PURIFYING MATERIALS
Am. Min. Prod. & Col. Co., Ltd.
Alpha-Lux Co., Inc.
Connelly Iron Sponge & Gov. Co.
Gas Machinery Co.
Gas Purifying Materials Co.
Iron Hydroxide Co.
Lavino, E. J., & Co.

PURIFIER TRAYS
Connelly Iron Sponge & Gov. Co.
Gas Machinery Co.
Gas Purifying Materials Co.
Steere Engineering Co.

RANGES—GAS
A. B. Stove Co.
Standard Gas Equipment Corp'n (Vulcan Div.).

RADIATORS
House Heating
Clow, J. B., Co.

REFRACTORY LININGS
Quigley Furnace Specialties Co.
Jersey City Refractories Co.

REGULATORS
Chaplin-Fulton Mfg. Co.
Connelly Iron Sponge & Governor Co.
Equitable Meter Co.
Reynolds Gas Regulator Co.
Steere Engineering Co.

RETORT CEMENT
Quigley Furnace Specialties Co.

RETORTS
Horizontal and Inclined
Gardner, Jr., Co., James
Gas Machinery Co.
Improved Equipment Co.
Isbell-Porter Co.
Jersey City Refractories Co.
Missouri Fire Brick Co.
Parker-Russell Min. & Mfg. Co.
Russell Engineering Co.
Stacey Bros. Gas Constr. Co.
Silica and Clay
Gardner Co., James
Gas Machinery Co.
Improved Equipment Co.
Parker-Russell Min. & Mfg. Co.
Russell Engineering Co.
Vertical
Bartlett-Hayward Co.
Gas Machinery Co.
Isbell-Porter Co.
U. G. I. Contracting Co.
West Gas Imp. Co. of Amer.

RETORTS (Silica and Clay)
Jersey City Refractories Co.

SCRUBBERS
See Purifiers.

SERVICE PLUG—RUBBER
Edward A. Behringer Co.
Safety Gas Main Stopper Co.

SPONGE
Iron Hydroxide
Lavino, E. J., & Co.

STATION METERS
Connersville Blower Co.
Pittsburgh Meter Co.

STOKERS—MECHANICAL
Westinghouse Elect. & Mfg. Co.

STOPPERS
Gas Main
Edward A. Behringer Co.
Safety Gas Main Stopper Co.

STREET DEPT. EQUIPMENT
Connelly Iron Sponge & Governor Co.
Edward A. Behringer Co.
Safety Gas Main Stopper Co.

STOVES—GAS
A. B. Stove Co.
Standard Gas Equipment Corp'n (Vulcan Div.).

STREET LAMPS
General Gas Light Co.
Welsbach Co.
Welsbach Street Lighting Co.

TANKS
Bartlett-Hayward Co.
Cruse-Kemper Co.
New York Engineering Co.
Riter-Conley Co.
Stacey Bros. Gas Construction Co
Stacey Mfg. Co., The
Steere Engineering Co.

TAR EXTRACTORS
Bartlett-Hayward Co.
Isbell-Porter Co.

TEMPERATURE CONTROLLING DEVICE
American Gas Furnace Co.
Precision Thermometer & Instrument Co.

TEMPERING AND COLORING MACHINE
American Gas Furnace Co.

THERMOSTATS
Claus Automatic Gas Cock Co.
Precision Thermometer & Instrument Co.

THERMOMETERS
Pittsburgh Meter Co.
Precision Thermometer and Instrument Co.

TIPS
Gleason, E. P., Mfg. Co.

TOOLS
Nye Tool & Machine Works

TUBING
Gleason, E. P., Mfg. Co.

VALVES
Gas
Bartlett-Hayward Co.
Claus Automatic Gas Cock Co.
Gas Machinery Co.
Isbell-Porter Co.
Ludlow Valve Mfg. Co.
Stacey Bros. Gas Constr. Co.
Stacey Manufacturing Co., The
Steere Engineering Co.
Oil, Steam and Water
Ludlow Valve Mfg. Co.
Back Pressure
Chaplin-Fulton Co.
Connelly Iron Sponge & Governor Co.

WASTE HEAT BOILERS
U. G. I. Contracting Co.

WATER GAS APPARATUS
Bartlett-Hayward Co.
Gas Machinery Co.
Isbell-Porter Co.
Stacey Bros. Gas Construction Co.
Stacey Manufacturing Co., The
Steere Engineering Co.
U. G. I. Contracting Co

WATER HEATERS
Pittsburg Water Heater Co.

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POSITION WANTED as assistant superintendent or superintendent of water gas plant. A technical graduate, 31 years of age, and have been in employ of large gas company for nine years, working as assistant or superintendent in four of their largest plants. Would also consider position in any other line where plant management or my ability and practical experience in mechanical or steam engineering would be of special value. Location immaterial, but position of or leading to one of responsibility wanted. Best reference can be furnished and am available at once. Address Box 721, care American Gas Journal, 53 Park Place, New York City.

GAS ENGINEER and manager, with experience in large and small situations, desires connection with company in the East or Middle West. Would consider position as manager in town of 30,000 or engineer for a chain of plants. Address Box 720, care American Gas Journal, 53 Park place, New York City.

BY EXPERIENCED GAS FITTER in all parts of its business. Can furnish the best of references. Address Box 719, care American Gas Journal, 53 Park place, New York City.

JOB WANTED by married man with 15 years' experience in manufacture and distribution of coal gas—high and low pressure. Address Box 722, care American Gas Journal, 53 Park Place, New York City.

POSITIONS WANTED

POSITION WANTED—By practical gas engineer, 35 years old, who has worked his way up from boiler fireman to superintendent of works, mains and office. Wants to locate with technical gas engineer where their combined efforts will make a success of any gas property; or entire charge of small property that cannot afford a head for each department, where it is necessary one man must not only know how things are done but can do them himself. Will go anywhere. High school and I. C. S. training. Address Box No. 726, care American Gas Journal, 53 Park Place, N. Y. C.

POSITION WANTED as general superintendent of mains, services, installations and meter repairing. Have had sixteen years' practical experience in high and low pressure, also natural gas, and have had charge of large concerns and employed at present; can give the best of reference. For detail, salary, etc., address Box 723, care American Gas Journal, 53 Park Place, N. Y. C.

POSITION WANTED—My experience is as follows: Three years employed as photometrist and chemist; four years employed as chemist in research engineering laboratory. Completed a course in gas engineering given by the Trustees Gas Education Fund for which I have a certificate of completion. I am willing to leave town and take a job as chemist or works control or any other department in which my services can be of value. Can furnish the best of references. Address Box 725, care of American Gas Journal, 53 Park Place, New York City.

POSITIONS WANTED

WANTED—Executive position with more promising future by man with broad practical experience in the manufacture and distribution of gas and electricity; also distribution of natural gas. Have operated successfully as executive of combined gas and electric properties for over nineteen years. Services available upon reasonable notice to present employers. Address Box 724, care American Gas Journal, 53 Park Place, New York City.

DIVIDEND NOTICE

OFFICE OF
THE UNITED GAS IMPROVEMENT CO.
N. W. Corner Broad and Arch Streets
Philadelphia, December 10, 1924.

The Directors have this day declared a quarterly dividend of two per cent. ($1.00 per share) on the Common Stock of this Company, payable January 15, 1925, to holders of Common Stock of record at the close of business, December 31, 1924.

Checks will be mailed.

I. W. MORRIS, Treasurer.

KELLER ADJUSTABLE COKE CRUSHER

Strong, Simple, Durable. Will Crush any Size Desired.

C. M. KELLER
COLUMBUS, IND.
Correspondence Solicited

UTILIZE YOUR GAS LIQUOR
NO EXTRA LABOR OR OPERATING EXPENSES

Improved AMMONIA Concentrator

About 130 in use. Write to
STROH & OSIUS, Patentee
MICHIGAN AMMONIA WORKS, Detroit, Mich.

5 1—6"x5'x5'
ALSO 5', 6' & 9'
WATER GAS SETS
AND OTHER USED
GAS EQUIPMENT

EQUIPMENT EXCHANGE
245 ELMWOOD
BUFFALO, N. Y.

American Stove Company, St. Louis, Mo.
Manufacturers of Lorain-equipped gas ranges and largest makers of gas ranges in the world

GEORGE M. CLARK & CO. Div. Chicago, Ill.
NEW PROCESS STOVE CO. Div. Cleveland, Ohio
DANGLER STOVE CO. Div. Cleveland, Ohio
QUICK MEAL STOVE CO. Div. St. Louis, Mo.
NATIONAL STOVE CO. Div Lorain, Ohio
RELIABLE STOVE CO. Div. Cleveland, Ohio

PURIFYING MATERIAL, — BAGGED OR BULK
Manufacturers of GOVERNORS, APPARATUS and EQUIPMENT
IRON Connelly Iron Sponge and Governor Co. New York, Chicago U.S.A. **SPONGE**

The Welsbach Gas Street Lamps Burn Every Night From Dusk To Dawn

WELSBACH STREET LIGHTING COMPANY of AMERICA

Philadelphia, Pa.

SPRAGUE METERS

No. 1-A METER

Represent twenty years of progress

Send for bulletin No. 7

SPRAGUE METER CO.

BRIDGEPORT, CONN.

Los Angeles San Francisco Davenport, Ia.

To Find: The Discharge from a Pipe and The Required Size of Pipe

USE THE COX COMPUTOR

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Keller, C. M. 29
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McWane Cast Iron Pipe 27
Michigan Ammonia Works 29
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Pennsylvania Engineering Works 10
Pittsburgh Meter Co. 14
Pittsburg Water Heater Co. 27
Precision Thermometer & Instrument Co..... 27

Quigley Furnace Specialties Co. 22

Radiant Heat Corp. of America..... 12
Reynolds Gas Regulator Co. 17
Ridgway & Son Co., Craig..... 16
Riter-Conley Co. 27
Russell Engineering Co. 25
Roper Corporation, Geo. D. 6
Roots Co., P. H. & F. M. ..... —

Safety Gas Main Stopper Co. 8, 22
Sprague Meter Co. 30
Stacey Bros. Gas Construction Co..... 24
Stacey Manufacturing Co. 5
Standard Gas Equipment Corp. ..... —
Steere Engineering Co. 27
Strickler, W. W., & Bros. 27
Superior Meter Co. ..... —
Surface Combustion Co. 20

Tufts Meter Works, Nathaniel ..... —

Unger, John S. 27
U. G. I. Contracting Co., The..... 9
U. S. Cast Iron Pipe & Fdry. Co..... 27

Waring, George H. 25
Welsbach Company 19
Welsbach Street Lighting Co. 30
West Gas Improvement Co. of America..... 3
Westinghouse Elec. & Mfg. Co. 25
Westmoreland Coal Co. 17
Wickes Boiler Co., The 17

BUYERS' REFERENCE INDEX, PAGES 26 AND 28.

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